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Vendor Managed Inventory (VMI) with Third Party Logistics (TPL) Services-----Optimizing Inventory Model and Logistics Costs Comparison between Multi-Fineline Electronix Inc.and Delta International Logistics Co. Ltd.

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Vendor Managed Inventory (*VMI*)

with Third Party Logistics (*TPL*) Services

-----Optimizing Inventory Model and Logistics Costs Comparison between Multi-Fineline Electronix Inc. (*MFLEX*, China Branch) and Delta International Logistics Co. Ltd.

(Case: A Current Project in Electronic Component Trade)

By

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Abstract

Purpose – This paper aims to increase the understanding of *VMI* model with *TPL* services, which can bring huge values in the whole supply chain.

Design/methodology/approach – Logistics costs in 3 different models will be compared with. Firstly, it is in the normal supply chain, which each part in the supply chain has their own inventory. Secondly, there is *VMI* situation in the supply chain. The third one is *VMI* model with *TPL* services. The logistics costs will be calculated by formulas. In the other hand, by researching in two different companies, Multi-Fineline Electronix Inc. (China Branch) and Delta International Logistics Co. Ltd. which one is a supplier for American market and the other is a *TPL* company, I got different costs data to analysis logistics costs in a real situation to find the problem there. At last, a comprehensive project will be introduced to embody some values of *VMI* with *TPL* services.

Findings – Overall, with the comparison of logistics costs by equations, real data analysis and a case study, all these can prove the values of *VMI* with *TPL* services, which are lower logistics costs, efficiency transportation, lower purchase price by central buying and so on. On the other hand, creation of value added services are also a challenge for *TPL* companies.

Originality/value – The idea of *VMI* with *TPL* services in a particular business. *VMI* with TPL services can reduce logistics costs and solve overstock problems in the *Electronic Component Trading Business*. *TPL* can offer creative services like E-hub.

Key Words

VMI, *TPL*, Logistics costs, Overstock, Electronic Component Trade.

Contents

1 Introduction

1.1 Basic Concepts

1.1.1 Concept of Vendor Managed Inventory

Amy E. Murphy defined in "Vendor Managed Inventory. Com" (2005) as "A means of optimizing Supply Chain performance in which the manufacturer is responsible for maintaining the distributors' inventory levels. The manufacturer has access to the distributors' inventory data and is responsible for generating purchase orders."

VMI -- where a supplier manages its customer's inventories of its products, including setting inventory level targets, usually based on achieving a level of service specified by the customer. The inventories might be held on consignment (i.e., owned by the supplier) or owned by the customer. (*Source: Lapide, 2002*)

1.1.2 Concept of Overstock

Carrying more products on a particular area or warehouse than it can support for any length of time.

1.1.3 Concept of Third Party Logistics

Third Party Logistics (*TPL*) is the function by which the owner of goods (The Client Company) outsource various elements of the supply chain to one *TPL* company that can perform the management function of the clients inbound freight, customs, warehousing, order fulfillment, distribution, and outbound freight to the clients customers. (*Source: A comprehensive TPL directory for supply chain and logistics decision makers, 2005*)

Africk and Calkins (1994) defined *TPL* as "A relationship between a shipper and a third party which, compared with basic services, has more customized offerings, encompasses

a broader number of service functions and is characterized by a longer-term, more mutually beneficial relationship."

1.1.4 Concept of Electronic Component Trade

Electronic Component Trade is a part of Electronic Product Exchange Business trading capacitors, Integrated circuits, transistors, resistors... (See, Fig.1) Component trade is a huge globe business. There are manufacturers, distributors and retailers in the market, who compose the supply chain.
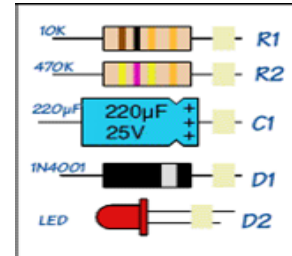
Fig.1 Components
(John Hewes 2008,
The Electronics Club)

1.2 Chinese Logistics Industry (*VMI & TPL*)

Nowadays, in China there are many transnational corporations using *VMI*. For the local Chinese companies especially medium and smaller ones, they are still exploring ways of changing. It is said by Southern China Medicine Hub (*STCMH*) that, the retailers who using the *VMI* model are only 3% in China. *VMI* is an efficient way for some companies, and Chinese companies should try to use it in a suitable way. However, I think it is not suitable for all companies. Each company has his own characteristic, and different ways to operation.

As a matter of fact, *VMI* has its merits and faults in the real operation. The most important thing is to recognize its functions in the company, and then to optimize the advantages. There is one solution to optimize the advantages, which is using the *TPL* services. As a middle operation stage, *TPL* can offer professional information technologies and transportation methods to save the costs.

According to the Chinese official statistics, expenditure on logistics for 2005 was 483.71 billion *USD*. The logistics cost was 18.5% of *GDP*. Until 2001, the market scope of the real *TPL* in the Chinese market was 5 billion dollars. 70% of the *TPL* had 30% average

increasing range in the business during the past 3 years. While, for the whole *TPL* market in China from 2000 to 2005, the annual increasing range was 25%. *(Data from STCMH)*

From 2004 to 2007, Gross Domestic Logistics Costs in China (*GLC*) increased year after year, especially from 2005 to 2006, increasing by 13.5%. Until 2007, the price and competition in the market were changed, and the speed of increasing was slow. However, it will be still growing because of economic growing and Olympic games, and other events. (See Fig.2)
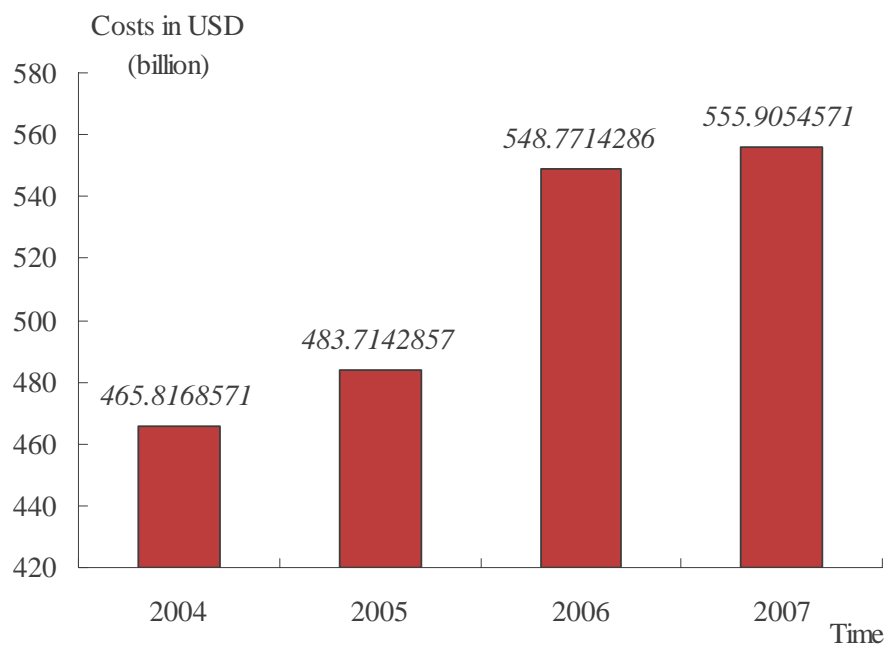
Fig.2 Gross Domestic Logistics Costs in China *(Data from OCN)*

In 2006, *GLC* was 18.3% of *GDP* in China. In the other hand, the structure of the *GLC* was changed. The transportation costs were 30.03 billion *USD*, 55% of the whole costs; the warehouse costs were 17.62 billion *USD*, 32% of the whole costs; the management costs were 7.24 billion *USD*, 13% of the whole costs. (See Fig.3)

13%

☐ Gross Transportation costs

■ Gross Warehouse costs

☐ Gross Management costs

32%

55%

The Structure of Logistic Costs in 2006
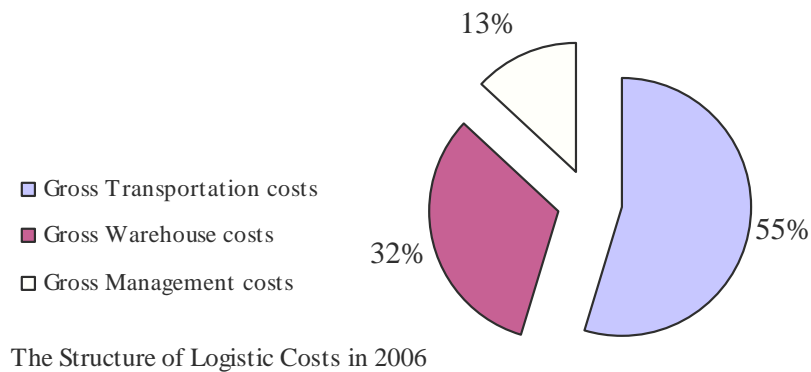
Fig.3 The Structure of Logistics Costs in 2006

(Data from OCN)

According to an investigation of China Association of Warehouses and Storage (*CAWS*), in Chinese Industrial Enterprise, 82% of the raw material logistics are responded by themselves or suppliers. An investigation (2005) to 450 medium and large enterprises in China by *CAWS* said that 45% enterprises wanted to chose new logistics companies, and 75% of them would like to corporate with new-type logistics companies instead of old warehousing or transportation companies. What's more, 60% of the enterprises would like to outsource all the integrated logistics business to the new-type logistics company like *TPL*s, so that they could reduce the costs of inventory, transportation, distribution, information service and so on. *(Data from STCMH)*

China has a huge logistics market in the world. It has already attracted a lot of famous big companies into the market. In the future, the speed of development of Chinese logistics will rapidly accelerate. Especially the development of *TPL*, it is predicted (2007) that the profits from Chinese Logistics Business will increase by 171.4 billion *USD*, until 2008 the demand for Olympic Games will up to 39.43 billion *USD*. *(Data from STCMH)* The logistics market will becarved up into more pieces or be integrated, as its increasing and competition going up. The environment of development of logistics in China is improving in policies, therefore, this business will be rapidly growing in the future.

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1.3 My Research Work

For proving my idea and finishing thesis, I had been looked for chances to work in a particular industry which could have more details to understand the whole supply chain. Therefore, I found chances to research in Delta International Logistics Company and Multi-Fineline Eliectronix Inc. (Suzhou Branch) for about 4 months. After researching I have deeply understood for Electronic Component Trade and had basic operation knowledge about the whole supply chain, because of the relationship between these two companies. Done some operation works could help me understand the process, problems and so on. Meanwhile, I could collect data to help me finish my thesis.

1.3.1 Research in Delta International Logistics Co., Ltd.

For one reason is that this company gave me a good opportunity and conditions to research, and I could learn different experience in three departments, operation department, warehouse department, and sales department, which can help me have a great chance to collect data of *TPL* process and *VMI* operation process.

For another reason is that this company is invested by government, which has unique and traditional characteristics. It has a quite influence for the whole Chinese Logistics Business. In the other hand, it is located closed to Shanghai, a city with huge logistics business, and also one of the centers of Chinese economy.

Delta International Logistics Co., Ltd. is in the Suzhou Bonded Logistics Center (*BLC*) in Suzhou Industry Park (*SIP*). *BLC* gives him special opportunities to development including policies, funds and human resource advantages.

SIP (Suzhou Industry Park)

In Feb. 1994, Chinese and Singapore governments signed the Agreement on Joint Development of *SIP*. The project commenced in May 1994 with the area if 288 sq. km and registered population of 260000.

Within Suzhou Industrial Park，there are various functional parks, such as China-Singapore science hub, Suzhou logistics center, Export processing zone, International science park, and so on.

SLC/BLC (Bonded Logistics Center)

BLC was approved by Customs General Administration in May 11, 2004. It passed the united inspection made by *CGA*, Ministry of Finance, State Administration of Taxation and State Foreign Administration Bureau in August 18, 2004. Meanwhile, in October 12, 2004, it was approved to have trial operation. Furthermore, Interim Measures for *BLC* (B type) was published by Customs General Administration and was implemented on July 1, 2005.

Main Favorable Policies for *BLC*: Abroad inbound goods are kept bonded; No customs duty or *VAT* required; Domestic inbound products are regarded as exports and will enjoy *VAT* rebate; Cargos in *BLC* are allowed to combine, transfer and store for two years.

Delta International Logistics Co., Ltd.:

It was founded on April 18, 2005, providing professional *TPL* services as a subsidiary of *SEALL* (A stated owned company by *SIPAC* with registered Capital 5million *RMB*.) The service range includes warehousing, distribution, transportation, customs clearance and diverse value-added logistics service, e.g. packaging, labeling, *I&E* trading, etc.

Warehouse Facilities has around 10,000 sq. m Non-bonded warehouse and 10,000 sq. m Bonded warehouse.

1.3.2 Research in Multi-Fineline Electronix Inc.

For another company, Multi-Fineline Electronix Inc. (*MFLEX*), it's been adventure to finish my thesis, because it was necessary for me to look for a new manufacturer for more information and data to analysis. At last, I found *MFLEX*, and the material manager is very kind and agreed to help me with some real inventory data. Actually, I have got a

MRP system of this company. Multi-Fineline Electronix Inc. is a big transnational corporation, which established branch companies in China. Suzhou is one of the branches. There are warehouses and factories in Suzhou.

MFLEX was founded in 1984 with targeting that position in the marketplace. It has grown to become one of the largest flex circuit manufacturers and assemblers worldwide. Through partnerships with their customers and six plants worldwide, *MFLEX* continues to proudly serve their prestigious list of satisfied customers spanning the Asian, North American, South American and European continents. (Introduction form www. mflex. com)

The research had been done in the end of April. On 3rd Mar., 2008, which was during my research time, in Delta International Logistics Co., Ltd., they had a new business project related with establishment of Chinese *EPEC* (Electronic Products Exchange Center). Delta wants to get more profits by offering services to *EPEC*. Considering overstock problems in this industry, acting as a trader offering *VMI* services to the manufacturers like *MFLEX* and other upper or downstream companies is a new idea in this industry. In this situation, Delta can be a trade hub of the electronic components. In the paper, I will introduce some parts of the project with the help of staffs in the company and help people understand the situations in China. In the mean while, this project gives a good example in my thesis.

1.4 The Purpose of Paper

The purpose of this paper is to introduce the *VMI* with *TPL* services by logistics costs comparison , real data analysis, and a current project introduction. Comparing with the different models of inventory management with formulas to give a logic proof. *VMI* with *TPL* services can enhance the competition of the supply chain. By reading the paper, the vendors can clear their situation in the whole supply chain, and increasing the benefits in a better way. The most Important is that this comparison and improvement will be discussed in the Electric Component Exchange Business, which can bring new chances to *TPL*.

In the other hand, I hope this research can help some *TPL* companies in China deeply understand how to create new profits in the supply chain, and increase the efficiency and quality in the whole business operation or in this high competitive world. Especially, in the Electronic Component Exchange Business, as a real project, the relationship among the suppliers, *TPL*s, and customers will be stronger than before because of the services of *TPL*s. What's more, the benefits for all points of the supply chain can be clearly found increased.

It always has these kind of situations during the operation activities in the company: It needs   several days even months to make raw material into the finished goods, while the producing time just takes about several minutes or hours; The retails almost have 10 weeks inventory, but manufacturers can produce every week. The operator used to judging the value of production instead of the satisfaction of the customers. These problems can be concluded into how to balance the material flow and the cash flow among the suppliers, manufacturers, retailers and the final customers. By research *VMI* model with services, the problems can be improved.

VMI is a strategic behaviour between the joint partner. It is using the systematic and integrated thoughts to manage inventory. At the same time, it is optimizing the supply chain system. For example, it helps the suppliers or upper stream companies understand

the production and inventory information of downstream customers by some information technology. While in the other hand, the upper stream companies can monitor the inventory situation, give a quick response, and reduce the inventory costs of both sides.

However, as a matter of fact, Yan Dong and Kefeng Xu (2002) found that *VMI* increases the cost of supplier in the short term, which is a disadvantage of himself. Or there is another question, can all the points in the supply chain get the benefits by *VMI*? It is studied that when the buyer can't get the benefits , it makes him lack of participation enthusiasm. Some of these problems are happening in the supply chain.

Therefore, these disadvantages of VMI are already be found by some researches. However how to improve the VMI is another problem. In the paper, the point is *VMI* model with *TPL* services is a good way to optimize *VMI*. How this new model works and what kind of functions and what kind of value can be created in the whole supply chain management should be noticed. Meanwhile, the problems in how to improve the *TPL* services and make the supply chain more efficiency are also included.

In another aspect, though real data analysis and Electronic Component Trade project researching, *TPL* operation functions are clearly mainfasted in the entire business. In this way we can create more meaningful and profitable services to facilitate the whole supply chain in a smooth way.

2 Literature Review

2.1 Vendor Managed Inventory (*VMI*)

As the development of global economy, any single company can't be on the top in each business. It needs corporation among the upperstream and downstream companies. Supply chain management is very important to enhance the competition of the company and the whole supply chain which will quickly reply the changes of the market and satisfaction of customers. The competition in the future will be not only between the companies but between the supply chains.

In the traditional supply chain management, each company in the supply chain had his own inventory and managed them by himself. It always had some problems such as uncorrected predication, unstable supply, lake of corporation between the companies, lack of information, Bullwhip Effect. Supply Chain Management *(SCM)* focus on the efficiency and benefit on the whole supply chain. *VMI* (Vendor Managed Inventory) is suggested in this situation.

After suggesting *VMI* concept by Magee (1958), B & G and Wal-Mart develop a *VMI* system which had a great success. Since then, *VMI* became a hot topic in the logistics business. Gerber (1991) found *VMI* was more efficient than *JIT* and *ZERO*-Inventory by a special investigation. Andel (1996) though a survey of retailers discovered that most of the companies would operate the *VMI* program in the future several years. Cottrill (1997) thought that *VMI* would popular in the business, and could bring a revolutionary change to the distribution canal. Some of the researchers gave the explicit reports on reducing the Bullwhip Effect and logistics costs in the supply chain, such as LEE (1997), S.M.DISNEY(2002), Huashi Ma (2000), Lindu Zhao (2003).

2.1.1 Definition of *VMI*

Seldon and Affiliates (2000) pointed in their research "*VMI* – Fad or Future" that *VMI* was mainly used in car-manufacturing business, especially in low priced and easily worn parts. It is a kind of strategy that the user want to reduce the management costs, operation costs and responsible time.

Disney and Towill (2002) told us that though different people had varied views about *VMI* in different area and market environment, they had one common characteristic which is on the basic of transparency of stock position and demand rates in each point of supply chain. *VMI* was a production/ distribution and inventory control system. They also give examples of *VMI* from different types of inventory management thoughts, such as Synchronized Consumer Response, Continuous Replenishment Programs, Efficient Consumer Response, Centralized Inventory Management.

American Production and Inventory Control Society (*APICS*) have this definition of *VMI*, Under *VMI* model, supplier collects inventory data of user and maintains inventory level to optimize operation performance of supply chain. Checking user's inventory at regular intervals is an important method. Then they can quickly response to get higher service level or customer satisfaction.

2.1.2 Values created by *VMI*

Nowadays, *VMI* is widely used in many companies, such as Kmart, Dilllar, Dell, JCpenny, Lenovo, which they all got great success. The values created by *VMI* are as follow:

Reducing Inventory; Close to JIT

Suppliers make an inventory plan and deliver goods to retailers in time according to the entail production and sales and market situation. In the other hand, it is not necessary for retailers to keep large inventory in order to satisfy the demand changing. Efficiency

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prediction makes suppliers doing good production plan, and the inventory level will be reduced.

For manufacturers, *VMI* gives their changes to manage inventory in the long distance by internet tools, which they can finish the replenishment circles, and the replenishment time will he delayed to the production time at latest. For suppliers and retailers or distributors, *VMI* can make lower inventory level, even *JIT*.

Eliminate Bullwhip Effect

Ever since a long time ago, all companies in supply chain separately managed their inventory by themselves. Suppliers of raw material, manufacturers, logistics centers, distributors all can have their own inventory with a certain safety inventory. Because of that, demand will be distorted inevitably, which means enlarging the demand. This phenomenon can be called "Bullwhip Effect" in the supply chain, and it makes more serious of the supply and inventory risk to suppliers. With *VMI* model, inventory can be integrated and this Bullwhip Effect will be eliminated.

Increasing Customer Service Level (CSL)

As we all know, there are contradictions of inventory and services level. To improve the customer service level, they need more cushion inventory to reduce the stock-out situation, in order to speed up the delivery goods in time.

Suppliers and retailers establish strategic joint relationship, and then on the basic of common benefit they can give a quick response to the customers when the demand of the customers and market is changing. What's more, they can reorganize the production and sales tactic in order to satisfy the customers better. Using *VMI* model, suppliers can decide which orders are more important, how many the goods and which deliver will be the fist according to variety of information. Meanwhile, they can increase the service level according to its production capacity and retailers' demand, which is reducing the stock-out situation of retailers and satisfying the customers.

Optimizing Business Flow; Increasing Efficiency of Supply Chain

In the *VMI* model, by connecting and integrating some business flows, the business flows of suppliers and retailers can be optimized. Get rid of some steps which can not bring values, then flows will be more smooth and convenient. At the same time, the dealing speed and quality of services can be improved to be more sensitive, soft and competitive.

2.2 Third Part Logistics (*TPL*)

2.2.1 Definition of *TPL*

TPL as an outsourcing business has about hundred years history in Europe. Most of the famous companies offered normal services such as transportation, warehouse long time ago, like Schenker AG. However, it became a formal business since 1980s in *U.S.A*.

B.S.Sahay and Ramneesh Mohan (2006) told us in their research, "*TPL* logistics services are widely prevalent in North America (Lieb, 1992; Lieb and Randall, 1996) and Europe (Lieb et al.,1993) and have been examined in a number of previous studies. Similar studies have focused on logistics issues in Bulgaria (Bloomen and Petrov, 1994), South Africa (Cilliers and Nagel, 1994), Australia (Dapiran et al., 1996), Korean (Kim, 1996), Asia Pacific (Millen and Sohal, 1996), Singapore (Bhatnagar et al., 1999), and Indochina (Goh and Ang, 2000). These countries have availed large benefits of *TPL* services over the last few years…"

Wikipedia (2003) defines *TPL* in this way, "A third-party logistics provider (abbreviated *TPL*) is a firm that provides outsourced or 'third party' logistics services to companies for part, or sometimes all of their supply chain management function. Third party logistics providers typically specialize in integrated warehousing and transportation services that can be scaled and customized to customer's needs based on market conditions and the demands and delivery service requirements for their products and materials."

2.2.2 *TPL* Services in the World

Europe: *TPL* has a long history in Europe. Its ancestor offered assembling, warehouse, transportation, and clearance services among hundreds of dukedom and marquess areas. Currently, the percentage of *TPL* is larger than America. There are generally four levels for the European *TPL* companies: 1. Global services offering companies; 2. Traditional services offering companies; 3. Newly developing *TPL* companies; 4. *TPL* companies

with government investment. Furthermore, the major customers in Europe are automobile manufacturers and electrical manufacturers.

North America: *TPL* had a double-digit continual development since 1980s. After cold war, the world economic center trended to America. Each kind of business went ahead of other countries in the world, logistics business as well. Many companies focused on *TPL* to occupy larger market, by its advantages of information corresponding. In the notes and comments of Robert Lieb and Karen Butner (2007) that nineteen companies reported North American revenue data. The annual revenues for 2005 reported by the respondents ranged from 290 million *USD* to 7.0 billion *USD*, with the average being 1.045 billion *USD*.

TPL services are widely used in the world, and the busiest relationship is between Asia and North America. According to a report released in April 2007 by supply chain management firm Armstrong & Associates. "Most of the growth in the *3PL* arena will come from doing business abroad, and we don't see that changing anytime soon," says Evan Armstrong, president of Armstrong & Associates. "The international management transportation segment had a net revenue gain of 18 percent last year. If you break down the global *3PL* market in terms of gross revenue, it comes to $139 billion for Europe, $37 billion for Japan, and $30 billion for China, with the rest comprising other geographic areas and individual countries," adds Armstrong. "Most major global players saw their significant gains in the Asia/Pacific to *U.S.* trade lanes." (*Source: John Paul Quinn 2007*)

Global Estimates of *TPL* revenues in 2006 can be shown in Tab.1, and Fig.4. Most of the contract logistics are in Europe, which will be 98 billion *USD*. China is the no.4 in the table. As the development of Asia/pacific to U.S. trade lanes, in the furture it will be one of the largerest "Cakes" in the world. *(See Tab.1 and Fig.4, source John Paul Quinn 2007)*

Tab.1 Global Estimates of *3PL* Revenues--2006 ($ Billions)

|	Gross Revenue	Net Revenue	ITM	Contract Logistics
Europe	139	68	41	98
U.S.	114	53	42	72
Japan	37	17	7	30
China	30	15	10	20
Other Asia Pacific	18	9	6	12
Other Americas	24	12	8	16
Other	29	14	10	19
Totals	391	188	124	267
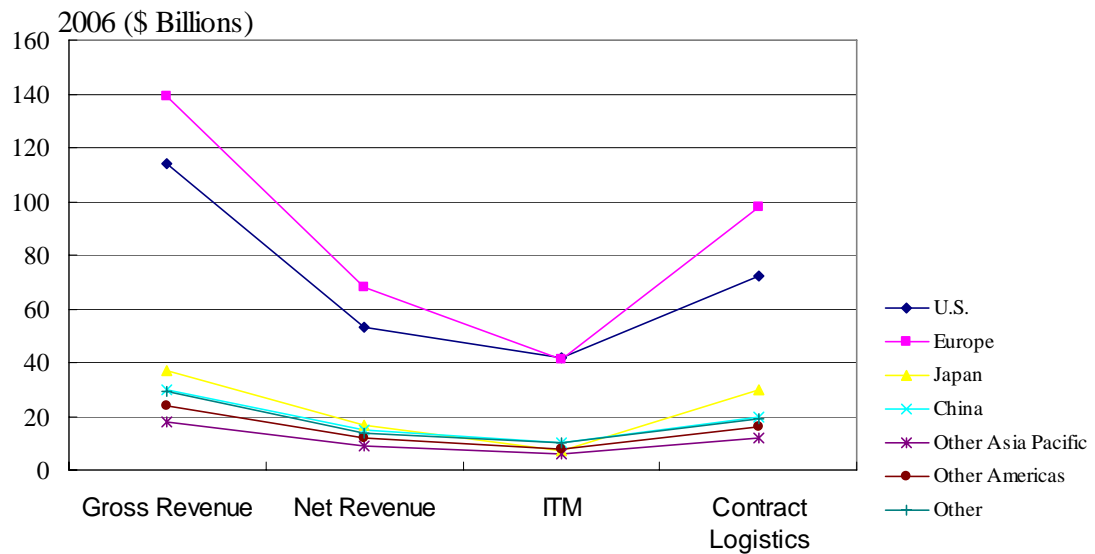
Fig.4 Global Estimates of *3PL* Revenues (*Surce John Paul Quinn 2007*)

2.2.3 *Benefits Brought By TPL*

Firstly, with the helps of *TPL*, companies can focus on their major business and optimize the allocation of resources. They can put limited human resources, financial resources to the core competitive business to development new technologies or products.

Secondly, *TPL* companies can save costs through increasing usages of resources in each part of supply chain and reduce risks. Professional *TPL* services can help companies get profits from different types of costs by professional mass production and costs advantages.

Thirdly, inventory which companies can not undertake for a long time can be reduced by

TPL services. Some inventory or materials are high value which should be delivered on time to make sure the minimum quantity. *TPL* can improve cash flow of cooperate company by offering elaborate logistics plans, timing transport methods and good warehousing.

Last but not the least, cooperated with *TPL* can foster a good and healthy company image. *TPL* are not competitors of companies, and they offer services on the side of customers, which mean that the management process can be transparent by global internet information technology. Logistics experts in *TPL* can control the whole supply chain by perfect equipments and bridle-wise staff.

3 Problem Description

3.1 Problem Description

All the successful cases prove that *VMI* is a high economic value inventory management method. Upper stream companies own and manage the inventory, and down stream companies only need to help the upper stream companies make plan, in order to realize the Zero-Inventory in the down stream companies. However, there are still some limitations by using *VMI* model.

Firstly, the cooperation between suppliers and retailers is limited. Secondly, *VMI* needs high trust for the relationship between the companies. Thirdly, although in the protocol of *VMI* it needs agreements by both of them, suppliers is still in a leading position, which is lack of negotiation during the decision process, therefore, it is difficult to avoid mistakes. At last, implementing *VMI* can reduce the total inventory costs, but in the *VMI* system inventory costs, transportation costs and unexpected loss are responsible by suppliers instead of users.

In order to control the risks I have mentioned, other advanced inventory controlling methods should be used together with *VMI*, like *JMI* (Jointly Managed Inventory), or *TPL*.

3.2 Methods to Solve Problem

I have mentioned the merits and faults with *VMI* model. The problem is that we must optimize using advantages, and reduce the affect of disadvantages.

Most of the researches on *VMI* has been done from the aspect of vendors. Some researchers focus on process control over *VMI (Wei Jian, Xue Yuncan, Qian Jixin, 2004).* Xie Meiping, Davia L. Olson *(2006)* used the mathematic models and simulation models to research the values of *VMI* in the retail supply chain. They construct a model of a supply chain with m suppliers and n retailers. Based on the model, the economic result of *VMI* has been appraised in their paper.

Two Ways to Optimizing VMI Model

Actually, there are two basic ways to optimize *VMI* model in my opinion: firstly, the disadvantages of increasing suppliers' short-term costs can be improved; secondly, we can reduce the logistics costs in the process of *VMI*.

For the first one, we can reduce buyers' order costs and apportion the fix costs for cars, in order to lower the suppliers' unit inventory cost. In this way, the suppliers' short-term costs can be brought down, and suppliers can get more profits.

Reducing buyers' order costs can be realized by means of information technology, so that order dealing will be more informatization and standardization. To apportion the fix costs, we can enhance the scope of transportation and optimize the delivery plan and routing problem. ---- These methods all can be realized by *TPL* though my research in the *TPL* company.

For the second one, the traditional *VMI* model is made up 2 parts, suppliers and buyers. Suppliers will manage the warehouse, transportation and delivery. Once there are problems in suppliers, it will make big mistakes in the whole system. Therefore, suppliers can outsource the packing, warehouse, transportation, and delivery to *TPL*, which can transfer the risks, and reduce the costs. ---- *TPL* function.

Optimizing *VMI* model can be sample like this as follow, with *TPL* services. (See Fig 5)
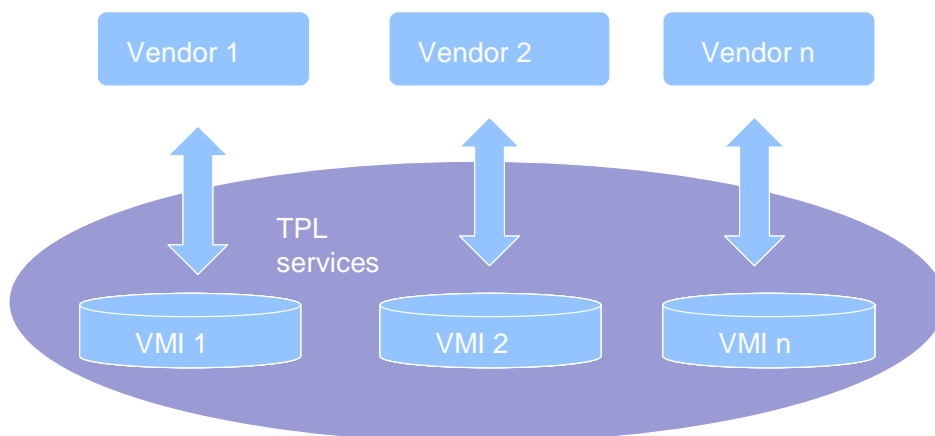
Fig.5 A sample *VMI* with *TPL* model

3.3 Advantages of *VMI* with *TPL* Services

From *TPL* side, if they can corporate with customers using *VMI*, they can satisfy customers by inventory controlling, which this kind of relationship can optimize the value of supply chain management. At the same time, they can make profits for themselves as well. In a word, *VMI* is a important method that companies can transform their inventory management costs and risks, while, in the other hand, whether *TPL* companies can integrate *VMI* or not is a key factor of core competition for the whole supply chain.

VMI model with *TPL* services can bring a lot of economic value to customers, as follow.

➢ Reducing inventory;

➢ Reducing purchase price by central buying;

➢ Reducing total purchase amount by establishing corporation relationship;

➢ Reducing suppliers' number;

➢ Saving purchasing time by improving process between suppliers and between suppliers and customers;

➢ Enhancing suppliers' fellowship;

➢ Reducing risks of inventory out of date;

➢ Improving product quality by cooperated with suppliers;

➢ Reducing costs for ordering, invoice, payment, transportation, and receiving.

4 Logic Proof with Models and Real Data Analysis

In this section, there are two parts. In the first part, I will introduce the models in different situations: one is a normal *VMI* situation, while the other is a *VMI* model with *TPL* services. Actually, the service is differently in different company, but I got the research analysis in Delta International Logistics Co., Ltd., so that I could put the *VMI* into the certain *TPL* companies in a certain situation. The most important is that the *EOQ* models can be established, and I calculated the costs in three situations, without using *VMI*, after using *VMI*, *VMI* with *TPL* model. All these models with its logistics costs can be shown as follow, in this way, I can compare the difference and the benefits in the models

In the second part, I tried to use real data in Multi-Fineline Electronix Inc. and Delta International Logistics Co. Ltd. to prove what I have found and the difference between the real situation and models.

4.1 Models and Costs Comparisons

4.1.1 Logistics Costs Notation

In a traditional way, logistics costs are made up order costs and inventory costs. There are buyers and suppliers in the market. Therefore, I can show in this way, order cost (O_S, O_B), and inventory cost (h_S, h_B). Here, I want introduce *TPL* into the logistics costs, therefore the transportation costs are separated, which means that there are three different parts in the logistics costs: Order costs (O_S, O_B), Inventory costs (h_S, h_B), and Transportation costs. In the other hand, there are fix costs (T_f) and variable costs (T_v) in transportation costs.

For further research, here is the list of the notation: (See Tab.2)

Tab.2 A list notation

Parameter			
B	Buyer	P	Production costs of supplier
S	Suppliers	F	Commission for *TPL*
d	Buyers' demand in a certain time	Π_B	Buyers' profit
O_S	Order costs of supplier	Π_S	Suppliers' profit
O_B	Order costs of buyer	Π_B^C	Buyers' profit under *VMI*
h_S	Inventory costs of supplier	Π_S^C	Suppliers' profit
h_B	Inventory costs of buyer	G_B	Logistics costs for buyer
T_f	Fix transportation costs	G_S	Logistics costs for supplier
T_v	Variable transportation costs	G_B^V	Logistics costs for buyer with *VMI*
p	Market price of product	G_S^V	Logistics costs for supplier with *VMI*
u	Contract price of product	G_S^T	Logistics costs for supplier under
u_v	Contract price under *VMI*		*VMI* with *TPL* services
α	*TPL* cost coefficient for holding buyers' inventory	ΔG_S	Difference of logistics costs Between *VMI* model
Q_B	*EOQ* of buyer		and *VMI* with *TPL* model
Q_B^V	*EOQ* of buyer under *VMI*	L	Total logistics costs without *VMI*
Q_B^T	*EOQ* of buyer under *VMI* with *TPL* services		or *TPL*
		L_V	Total logistics costs for *VMI* model
		L_T	Total logistics costs for *VMI* with *TPL* Model

4.1.1.1 VMI Model and Its Logistics Costs

A sample *VMI* solution is shown as follow (See Fig.6)
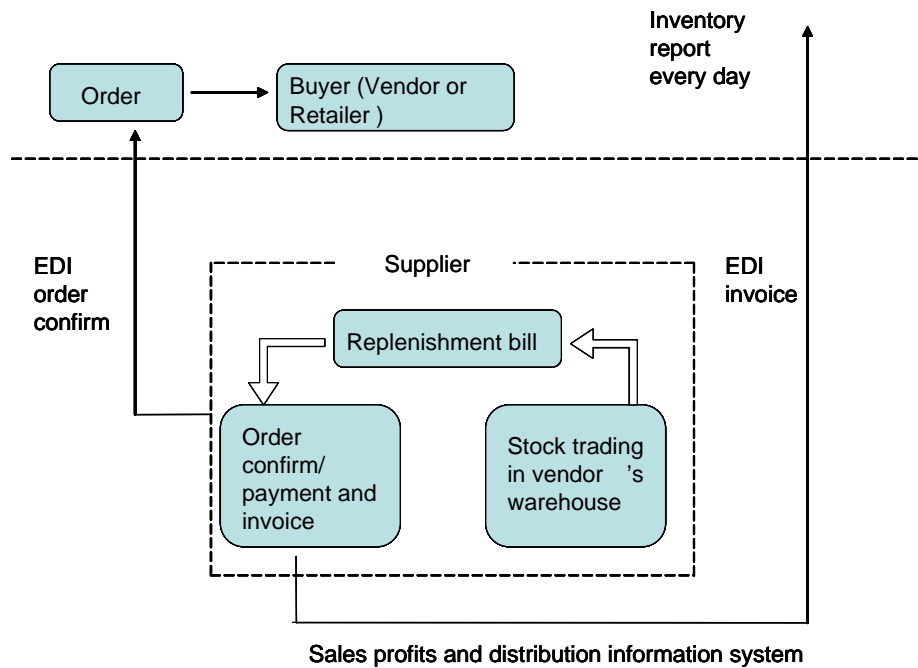
Fig.6 A sample *VMI* model solution

Disadvantages of VMI:

The main job of *VMI* is to reduce the cost in the short term by optimizing the quantity, which means the buyer can get largest profit in this process—the cost of buyer will always lower than before implement *VMI*. However, in the short term the supplier can not get any benefit during this process. The reason is that supplier responsible for the logistics cost of inventory transforming, which means that the cost of supplier will be increased in the normal condition. Yan Dong and Kefeng Xu (2002) found in their research that even in the long term, it is not sure for the supplier whether the profit will be increase or not. This profit uncertainty will directly lead to indifference of supplier's participations.

4.1.1.2 Logistics Costs Before and After Using VMI

Here, I will use the Economic Order Quantity (*EOQ*) as a basis for purchasing model, with one buyer and one supplier. *(Lal and Staelin, 1984 and Weng, 1995)* However, there are some assumptions as follow.

Assumptions:

➤ Certain demand

➤ No stock out situation

➤ Certain ahead time

➤ Buyer purchases final products from supplier, and sales amount equals to purchasing quantity, or they have a certain percentage.

➤ Buyer will pay for the transportation costs

Before using VMI

According to the *EOQ* model, I can get the buyer's *EOQ*. A basic *EOQ* order size can be given by:

$$Q_B = Q_B^E = \sqrt{\frac{2(O_B + T_f)d}{h_B}} \tag{1}$$

In this situation, the logistics costs for buyer and supplier will be as follow, with the *EOQ* order size *Eq. (1)*. Buyer will pay for the transportation costs.

$$G_B = \frac{O_B d}{Q_B} + \frac{h_B}{2}Q_B + \frac{(T_f + T_v Q_B)d}{Q_B} = \sqrt{2h_B(O_B + T_f)d} + T_v d \tag{2}$$

$$G_S = \frac{O_S d}{Q_B} + \frac{h_S}{2}Q_B = \sqrt{\frac{h_B(O_B + T_f)d}{2}}\left(\frac{O_S}{O_B + T_f} + \frac{h_S}{h_B}\right) \tag{3}$$

The total logistics costs in this model:

$$L = \sqrt{2h_B(O_B + T_f)d} + T_v d + \sqrt{\frac{h_B(O_B + T_f)d}{2}\left(\frac{O_S}{O_B + T_f} + \frac{h_S}{h_B}\right)} \qquad (4)$$

Therefore, the profit for buyer and supplier can be easily found as follow.

$$\Pi_B = pd - ud - \sqrt{2h_B(O_B + T_f)d} - T_v d \qquad (5)$$

$$\Pi_S = ud - P - \sqrt{\frac{h_B(O_B + T_f)d}{2}\left(\frac{O_S}{O_B + T_f} + \frac{h_S}{h_B}\right)} \qquad (6)$$

Under VMI model

Under *VMI* model, inventory will be charge of supplier instead of buyer. Supplier will decide inventory level, order quantity, and delivery time. The order costs will be *(O_S+O_B)*, and the inventory costs will be *(h_S+h_B)*. According to the new situation, there are some assumptions: In the initial stage, the order costs and inventory holding costs will not be changed.

Therefore, the *EOQ* will be as follow:

$$Q_B = \sqrt{\frac{2(O_S + O_B + T_f)d}{h_B + h_S}} \qquad (7)$$

Then, the logistics costs for buyer and supplier can be found, with new Order Quantity *Eq. (7)*. And the transportation costs will be responsible for supplier.

$$G_B^V = 0 \qquad (8)$$

$$G_S^V = \sqrt{2(O_S + O_B + T_f)(h_S + h_B)d} + T_v d \qquad (9)$$

The total logistics costs under *VMI* model:

$$L_V = G_S^V + G_B^V = \sqrt{2(O_S + O_B + T_f)(h_S + h_B)d} + T_v d \qquad (10)$$

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Therefore, the profit for supplier and buyer are as follow.

$$\Pi_B^V = pd - u_V d \tag{11}$$

$$\Pi_S^V = u_V d - P - \sqrt{2(O_S + O_B + T_f)(h_S + h_B)d} - T_v d \tag{12}$$

4.1.1.3 Logistics Costs Comparison

Total logistics costs comparison

Before using *VMI*, total logistics cost is *L, Eq. (4)*. In the other hand, when they using *VMI* model, the logistics cost is L_V, *Eq. (10)*, therefore, we can get the difference between them, as follow.

$$
\begin{aligned}
L - L_V &= \sqrt{2h_B(O_B + T_f)d} + T_v d + \sqrt{\frac{h_B(O_B + T_f)d}{2}} \left(\frac{O_S}{O_B + T_f} + \frac{h_S}{h_B} \right) \\
&\quad - \sqrt{2(O_S + O_B + T_f)(h_S + h_B)d} + T_v d \\
&= \frac{1}{2}\sqrt{2(O_B + T_f)h_B d} \left(\sqrt{1 + \frac{O_S}{O_B + T_f}} - \sqrt{1 + \frac{h_S}{h_B}} \right)^2 \geq 0.
\end{aligned}
\tag{13}
$$

According to calculation of *Eq. (13)*, it is clearly that $L \geq L_V$, only when under this condition $\dfrac{O_S}{O_B + T_f} = \dfrac{h_S}{h_B}$ is set up, then $L = L_V$. $\dfrac{O_S}{O_B + T_f} = \dfrac{h_S}{h_B}$ means that both of supplier and buyer have same rate of order costs and inventory holding cost.

In the other hand, I can see, only when this two inventory systems of buyer and supplier are not exactly the same situation, which means $\dfrac{O_S}{O_B + T_f} \neq \dfrac{h_S}{h_B}$, there are always profits inside.

Supplier's logistics costs comparison

Integrated inventory costs can be reduced by *VMI*, but it is not represent that it will

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inevitably bring benefits from reducing inventory costs of suppliers. On the contrary, the inventory costs of suppliers will increase under most of situations. Only when it is in a certain condition, it will be reduced. We can clearly see the difference between logistics costs of suppliers in two situations, *Eq. (3)* and *Eq. (9)* as follow.

$$G_S^V - G_S = T_v d + \sqrt{\frac{(O_B + T_f)h_B d}{2}} \left[2 - \left(\sqrt{1 + \frac{O_S}{O_B + T_f}} - \sqrt{1 + \frac{h_S}{h_B}} \right) \right] \qquad (14)$$

According to the formula, the difference is not sure by larger than zero or smaller than zero. Only when the formula smaller than zero, the logistics costs of suppliers will be reduced. Therefore, we can see the limitation of *VMI*.

4.1.2 VMI with TPL Services Model

TPL, as a medium operation stage, can depend on its strong information technology to deal with the *EDI* orders, which can make them quick and standard to reduce the order cost of buyers. What's more, *TPL* can increase the scale of transportation and optimize the distribution plan and routing to re-plan the fix cost of transportation.

Model (see Fig.7)
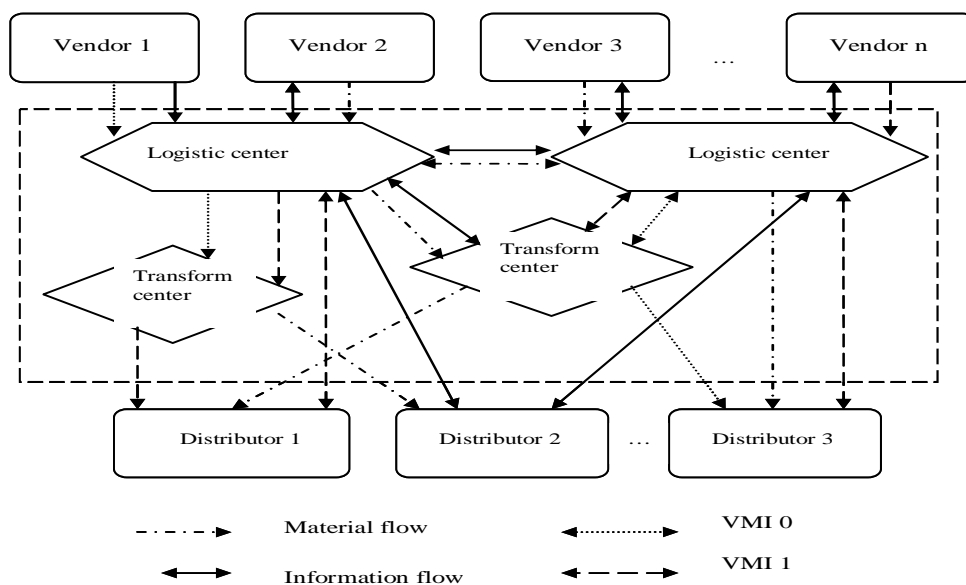
Fig.7 A sample *VMI* solution with *TPL* services model

4.1.2.1 Logistics Costs with TPL Services

From the supplier's side, can he use *TPL* services, which depends on if they can reduce logistics costs or not. To put this situation in a sample way, I assumed that *TPL* only responsible for transportation and inventory holding. In that situation, *TPL* can get commissions as follow.

$$F = T_v d + \frac{T_f d}{Q_B} + \alpha(h_S + h_B)\frac{Q_B}{2} \tag{15}$$

In the equation, "α" is cost coefficient for holding buyers' inventory for *TPL*. Obviously, because of scale advantage of TPL, "α" will be among 0 to 1.

Therefore, when $Q_B = Q_B^E$, the logistics costs for supplier will be found.

$$G_s^T = \frac{(O_S + O_B)d}{Q_B} + F = \frac{(O_S + O_B)d}{Q_B} + T_v d + \frac{T_f d}{Q_B} + \alpha(h_S + h_B)\frac{Q_B}{2} \tag{16}$$

After this, I can get first derivative from above formula. In this situation, I have Q_B^T.

$$Q_B^T = \sqrt{\frac{2(O_S + O_B + T_f)}{\alpha(h_S + h_B)}} \tag{17}$$

According to Q_B^T, we can put *Eq. (17)* to *Eq. (15)* as follow:

$$F = T_V d + (O_S + O_B + 2T_f)\sqrt{\frac{\alpha(h_S + h_B)d}{2(O_S + O_B + T_f)}} \tag{18}$$

Therefore, we can get the supplier's logistics costs with *Eq. (16)* and *Eq. (18)*.

$$G_S^T = (O_S + O_B)d\sqrt{\frac{\alpha(h_S + h_B)}{2(O_S + O_B + T_f)}} + T_V d + (O_S + O_B + 2T_f)\sqrt{\frac{\alpha(h_S + h_B)d}{2(O_S + O_B + T_f)}}$$

$$= T_V d + \sqrt{2\alpha d(h_S + h_B)(O_S + O_B + T_f)} \tag{19}$$

4.1.2.2 Logistics Costs Comparison

Comparing with supplier's logistics costs in two different models, one is *VMI* model and the other is *VMI* with *TPL* services model. We can clearly see the difference of supplier's logistics costs between them, with *Eq. (7)* and *Eq. (19)*.

$$\Delta G_S = G_S^V - G_S^T = (1 - \sqrt{\alpha})\sqrt{2(O_S + O_B + T_f)(h_S + h_B)d} \qquad (20)$$

ΔG_S is larger than 0, which means G_S^V larger than G_S^T, because α is among 0 to 1. Obviously, *VMI* with *TPL* services will reduce the supplier's short-term logistics costs.

4.1.3 Short Conclusion

According to logistics cost comparisons, 3 different situations have been considered. In the first situation, it is no *VMI* model in supply chain. Compared with second situation with *VMI*, only when this two inventory systems of buyer and supplier are not exactly the same, then there are always costs which can be reduced. In the real world, the things are more completed. That is to say, the inventory systems are always not the same, which means that *VMI* can bring profits to the whole supply chain. However, in the aspect of supplier, can *VMI* always bring profits to supplier? It is hard to say. Only when the formula *Eq. (14)* smaller than zero, the logistics costs of suppliers will be reduced. Therefore, we can see the limitation of *VMI*. Well, in the other hand, the third situation *VMI* with *TPL* services can change *VMI* model, reducing the short-term logistics costs of supplier, which makes the supply chain more efficiency.

4.2 Real Data Analysis

4.2.1 Company Snapshot

Multi-Fineline Electronix Inc.

Multi-Fineline Electronix engages in the engineering, design, and manufacture of flexible printed circuit boards and value-added component assembly solutions for electronics industry. Its products include mobile phone and smart mobile devices, bar code scanners, personal digital assistants, computer-storage products, printed circuits for medical applications, and blood oxygen sensors. The company serves original equipment manufacturers, electronic manufacturing services providers, and display manufacturers in mobile phones, smart mobile devices, portable bar code scanners, personal digital assistants, data storage devices, power supplies, and consumable medical sensor sectors. It sells products through in-house design and application engineers in the *U.S.* and China. The company was founded in 1984 and is headquartered in Anaheim, Calif. Multi-Fineline Electronix is 61% owned by *WBL* Corp. (*Data provided by Capital IQ; Source Business week, 2006)*

With help of Material Fulfillment Manager James Zhou in Multi-Fineline Electronix Inc. (Suzhou branch), I got supply, demand, transportation costs and inventory holding costs data, which can help me to prove my models. As a supplier for American market, *MFLEX* has it own warehouses and factories in Suzhou.

Delta International Logistics Co., Ltd.

Delta International Logistics company as a *TPL* company with government investment has its own advantages and disadvantages. Firstly, with government investment it is not only with money but also with policies advantages. It has special rights or privileges, which will easy for him to operation. However, as a matter of fact, *TPL* business has huge competition in the market, and a lot of companies can do such services like

organizing delivery, warehouse, or clearance.

When I was in the company, I realized that the competition among them, small advantages will be ahead of others. Delta International Logistics Co., Ltd. has such advantages: Free charge of renting warehouse, which belong to them; Good relationship with customs; Good location and so on.

4.2.2 Logistics Costs Analysis

4.2.2.1 Logistics Costs in Multi-Fineline Electronix Inc. (Suzhou)

In Multi-Fineline Electronix, I have been reading *MPR* plan for *RIM* company. Here, I will give the entire tables in the appendixes. What I want to prove is if there is any space in costs can be reduced.

The real situation is more complicated, because different companies have different business, which means that each order needs special care. Therefore, I will take one order for example to calculate logistics costs.

Tab.3 Transportation Cost-1 for One Order from HongKong to Shanghai

Transportation Cost-1				
HKG-SH	From HKG to SH			
Order Number	Shipment Number			
774-60360775	04544713			
Number of Packages	Net Weight	Gross Weight	Port of Shipment	
16	91.00	122.50	HKG	
International Transportation Fee	Fuel Cost	Safety-check Cost	Total	Currency
612.50	392.00	61.25	1065.75	HKD
International Transportation Fee	Draw sheet Cost	Airport Fee	Total	Currency
961.20	100.00	100.45	1161.65	RMB

According to Tab.3, this material with 122.5 kg from Hong Kong Port to Shanghai Port needs about 303.7*USD* (1065.75*HKD*+1161.65*RMB*) with exchange rates of 1:0.128, 1: 0.144, (25th, May, 2008). Order cost is 20*USD*.

Then, this material will be sent from Shanghai Port to Suzhou, where is the factory. Therefore, this part of transportation fee will be paid by this company as well.

Tab.4 Transportation Cost-2 for One Order from Shanghai to Suzhou

Transportation Cost-2				
SH-SU		From Shanghai to Suzhou		
Weight	Customs Clearance Fee	Customs Transit Fee	Inspection Application Fee	Regular Goods TRANS Fee
91	120	100	50	36.4
Entering Fee	Yard charge of controlled area	Quarantine Charge	Total	Currency
10	20	0	336.4	RMB

According to Tab.4, transportation costs and clearance fee from Shanghai to Suzhou will be 336.4 *RMB*, which is 48.44 *USD* (Exchange rate is on the same condition).

All in all, the total cost for one order from Hong Kong to Suzhou about 91kg material is 352.14 *USD*. This total cost will be responsible by this electronic company.

In other hand, I need to find inventory holding cost about this 91kg material. According to the information (See Tab. 5) from factory in *Multi-Fineline Electronix*, material "Dome sheet" 5kpcs equals to 4kg. 91kg will be 113750pcs (91kg*5k/4kg).

Tab. 5 Information about material: HDW-16045-001_1 and HDW-13551-001_1 at 5/5/2008

Unconfirmed PO	In transit	Need to order this week	push out	need to cancel	hold
					Week
	Buyer	**Project/Supplier**	**Part#/Lead Time**		**Date**
	Gao ying	13432#/12589#	HDW-16045-001_1	Demand	
1(4062)	Gao ying	G-Ray Front Frame;Saturn Front Frame	HDW-16045-001_100136	Open PO	1,000,000
	Gao ying	Panasonic Ca	Dome sheet	Delivery Sch	
	Gao ying	MPQ:4k/reel	L/T : 8wks (original 10wks)	Stock carry forward	133,371
	yang jing	13432#/12589#	HDW-13551-001_1	Demand	
2(4062)	yang jing	G-Ray Front Frame;Saturn Front Frame	HDW-13551-001_100196	Open PO	559,000
	yang jing	Tradex	Foam	Delivery Sch	
	yang jing	MPQ:100k/box; MOQ: 300K	L/T 3wks with 3 months forecast	Stock carry forward	157,198

In *Multi-Fineline Electronix*, Material Manager will order amount according to its lead

time or special orders from customers. Then, here in order to make this problem easy to clearly find the different costs, I will consider about *EOQ* model.

In another hand, Material Manager told me that it is easy to understand that they have inventory value with 10% of inventory holding cost per period. That is to say, when I can find the inventory value for one particular material, then I can get its holding costs.

On the basis of inventory table in Appendix B, I took one material: HDW-16045-001_1 for example. Unit cost is 2.1518*USD* (See Tab.6). That is to say, the inventory holding cost per period will be 0.21518*USD*.

Tab.6 Inventory Valuation Analysis-HDW-16045-001_1 at 5/5/2008

Inventory Valuation Analysis -EXPORT

Short Item Number	Item Number	Description	UM	Branch/Plant	Quantity	Unit Cost
…	…	…	…	…	…	…
461229	HDW-16045-001_1	Dome 0.15mm 1.35N	EA	4062	133371	2.1518

After that, the demand situation is important to find as well. With the explanation of Material Manager, I found the demand of material HDW-16045-001_1 at 5/5/2008. (See Tab. 8). The green part is product group which needs material HDW-16045-001_1.According to Tab.7, I can get average demand for two months about 126,829pcs, which is 83.5kg.

Tab7 Demand situation of material: HDW-16045-001_1 at 5/5/2008

Material Demand			wk19	wk20	wk21	wk22	wk23	wk24	wk25	wk26	wk27
Component Lead time : 1wks			5-May	12-May	19-May	26-May	2-Jun	9-Jun	16-Jun	23-Jun	30-Jun
HDW-16045-001_1	Yeild	0.94									
POP-13432-002_A			21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628
11951-005_B											
ASY-12669-001											
ASY-13842-001_B											
POP-12589-003_B			116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035
Total Demand			138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663

All the information or parameters I have got are as follow: Order quantity: 4856pcs (according to *EOQ* model); Weight: 83.5kg; Demand: 126,829pcs; Unit order cost: 20 *USD*; Unit inventory holding cost: 0.21518*USD*; Transportation cost: 323.25*USD* (from Hong Kong to Suzhou). Therefore, total logistics costs for one material with 83.5kg from Hong Kong to Suzhou will be as follow (See Tab.8).

Tab.8 Total logistics costs for one order

Item	Value	
Demand	126.829	*PCS*
Order quantity	4856	*PCS*
Unit order cost	20	*USD*
Inventory holding cost per period	0.21518	*USD*
Order costs	522.36	*USD*
Inventory holding costs	522.46	*USD*
Transportation costs	323.25	*USD*
Total costs	1368.07	*USD*

In this situation, I have got total logistics costs in this company about 1368.07*USD* for one order from Hong Kong to Suzhou. Material Manager told me that, they had *VMI* model in another factory. They put some local production material in supplier's factory, which could save transportation costs and purchasing price as well. Next step is to find total logistics costs in *TPL* company to see if there is any different in *TPL*'s warehouse.

4.2.2.2 Logistics Costs with Delta International Logistics Co., Ltd.

In Delta International Logistics Company, logistics costs will be counted by a completed way, which is different from manufacturers like *MFLEX*. Since Delta offers some special services for customers, the result for different customers is not the same.

Some normal services like clearance, warehousing, transportation and so on. Some special services for special customers like packing, assembling and so on. These special services are called value-added services, which depend on customers or contracts, and it is a way to expend market shares in *TPL* world as well. In this case, logistics costs which we can not just call it like that, has more completed meanings here. Furthermore, it is obvious that logistics costs in *TPL* companies include warehousing, transportation,

packing, assembling… However, here what I want to prove is just about one order. I want to discuss that if *MFLEX* using *TPL* services and *VMI* model to manage inventory and purchasing, what will happen then?

Therefore, I searched the financial tables in Delta, and tried to find some companies like *MFLEX*. In another hand, I tried to find the basic costs for different items such as clearance fee, inspection fee, warehousing fee…I collected some data in Tab.10 about one month operation details in Delta. (See Tab. 9) It is shown the entire table in Appendix.

Tab.9 Some parts of operation details for one month (*RMB*)

Receiving Date	Order number	Quantity	Weight (kg)	Legal Inspection Fee	Commodity Inspection Fee	Inspection Application Fee	Customs Clearance Fee	Revising Fee	Total
1-2-07	WBBW07010596	7	83.88				90.0		90.0
1-2-07	WBBW07010605	22	20953				90.0		90.0
1-2-07	WBAW07020005	30	5546.5				90.0		90.0
1-2-07	WBBW07020006	2	201				90.0		90.0
1-2-07	WBBW07020007	1	96				90.0		90.0
1-2-07	WBBW07020008	2	179				90.0		90.0
1-2-07	WBBW07020009	64	588				90.0		90.0
1-2-07	WBBW07020010	22	120.6				90.0		90.0
1-2-07	WBBW07020011	2	219				90.0		90.0
1-2-07	WBBW07020012	3	13.74				90.0		90.0
1-2-07	WBBW07020013	3	13.74				90.0		90.0
…									
28-2-07	WBBW07020332	5	1545.4				90.0		90.0
28-2-07	WBBW07020333	13	5947				90.0		90.0
28-2-07	WBBW07020334	3	1460	6.0	15.0	50.0	90.0		161.0
28-2-07	WBBW07020335	360	10454	6.0	15.0	50.0	90.0		161.0
28-2-07	WBBW07020336	50	814				90.0		90.0
28-2-07	WBBW07020337	3	784.5				90.0		90.0
28-2-07	WBBW07020338	2	12.36				90.0		90.0
28-2-07	WBBW07020340	60	258	6.0	15.0	50.0	90.0		161.0
28-2-07	WBBW07020341	2	18.5				90.0		90.0
28-2-07	WBBW07020342	15	15296				90.0		90.0
								100.0	100.0
								100.0	100.0
								100.0	100.0
								100.0	100.0
	One Inspection Document							200.0	200.0
Total				4759.0	840.0	2800.0	25470.0	600.0	**34469.0**

Form the table, It is clearly to find that some basic costs in Delta are lower than the ones in *MFLEX*. For example, custom clearance is 90*RMB* which is lower than 120*RMB* in

MFLEX. In another hand, since *TPL* uses scope of operations, other price is lower as well. That is to say, when Delta gets a lot of orders or service requires then they can operate them as a big order to downstream companies. In that case, costs will be lower according to the contracts between *TPL* with downstream companies. That is also called economies of scale.

Therefore, order costs and transportation costs can be reduced by *TPL* services. Then how about warehousing or inventory holding costs. Tab.10 have some data about warehousing costs which I collected in the company, well, in *TPL* company, the costs turns to be incomes.

Tab.10 A part of income in Delta for one month (*RMB*)

Project 1	International Transportation								
Customer	Customer 1	Customer 2	Customer 3	Customer 4	Customer 5	Customer 6	Customer 7	Customer 8	Total
Warehouse Type	In bond	In bond	In bond	In bond	In bond	In bond	In bond	In bond	
Entering Weight (kg)	527	27.354	2899.24	4.88	600.86	14	3158	40.3332	
Entering Order Number	297	9	95	8	77	5	9	2	
Entering Warehouse		780.69	29983.78	5661.6		250		605.7	
Entering Warehouse Management	6231.42	247.8	2916.1	2253	6859	100		300.03	
Delivery Weight (kg)	1068	271.657	1961.04	341.3	946.41	8	2474	41	
Delivery Order Number	366	2	111	47	105	5	7	8	
Delivery out of Warehouse		826.69	36403.78	1768.04		200		665.28	
Delivery Management	10983.79	287.99	3316.27	1807.44	10372	80		357.83	
Value Added									
Packing				4500		1100			
Inventory holding cost	17215.21	1335.28	57904	1220	7440	10230	11200	6370.5	
Total Income	28822.42	3478.45	130523.93	17210.08	24671	11960	11200	8299.34	236165.22

Since the warehouse is mixed with a lot of different kind of products. It is difficult to find the exactly electronic products. That is to say in this case, I can consider about the weight. How many products have how much inventory holding costs.

According to Tab.11 for different customers with different products, it is completed to calculate the inventory holding costs because of varied weights, types and volume. There is a standard rule to calculate the inventory costs when there is different kind of products. The rule is that compared with weight and volume with an equal: "1000kg=6 cubic meters", which is a approximate way, then, we need to find which one is larger. When

weight is larger than volume weight we need to calculate by weight, and vice versa. For example, customer3 has 2899.24kg products which has inventory holding costs 57904*RMB*. That is to say, if there is 83.5kg products, it will have 1667.67*RMB* inventory holding costs, which is 240.15*USD*. (Exchange rate is on the same condition) Comparing with the inventory holding costs in *MFLEX*, 522.46*USD*, it is lower. However, there is a lot of conditions to affect this changes. According to my way, I find the result that it will have lower inventory holding costs in *TPL* warehouse.

As a matter of fact, in Delta warehouse, there are 3 different warehouses to deal with everyday orders. Two of them is smaller than the other one, and they are professional ones dealing with special customers. The other one is mixed warehouse with different characteristic goods, such as *LCD*, Electronic Components, screws, steel wires…Therefore, in this mixed warehouse, they have a system with ABC strategy. It will be more complicated calculation.

Actually, in the real world, there are many reasons causing costs lower or higher. We need to consider a lot of factors to deicide to using new strategies. Many researchers have done such researches how to deicide the new strategies. Everything has its two sides, but the most important is that what kind of loss is under your floor level.

5 Case Study

5.1 Background

For the past few years, manufacturers for electronic information products face a fierce competition. Production rate and management efficiency become to be the key of competition. High speed updating, short life cycle of products, are huge challenges for the whole business. Electronic components supply chain has the problems of shortage and surplus.

China has become a huge *ICT* (Information and Communications Technology) goods exporter. It is reported by *OECD* (Organisation for Economic Co-operation and Development) located in Paris that,

"As of 2004, China has become the biggest exporter of *ICT* goods (*USD* 180 billion), surpassing Japan and the European Union in 2003 and taking the lead over the United States in 2004, While Chinese *ICT* imports (totalling *USD* 149 billion in 2004), over the last few years export growth of *ICT* goods has passed imports and exports reached *USD* 180 billion in 2004." (*Source from: OECD*)

OECD ICT indicators

Imports and exports of ICT goods, billions of USD in current prices, 1996-2004 (US, China, EU15, Japan)

Current USD billions
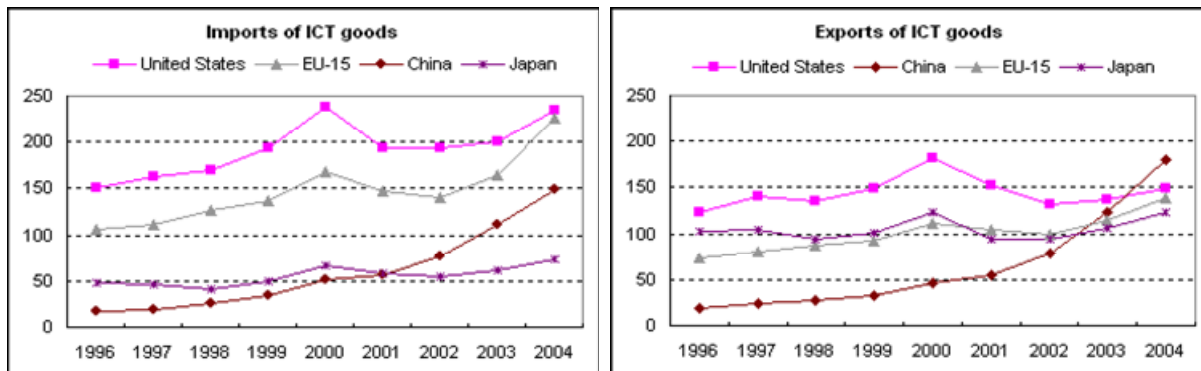
Note: Data for the EU exclude intra-EU trade.

Source: OECD, ITS database.

Fig.8 Imports and exports of ICT goods in the world

According to its report, the main destinations for Chinese *ICT* exports are the United States (24% of total *ICT* exports), Hong Kong, China (23%), *EU* 15 (20%), and Japan (10%) with Hong Kong, China losing its place as the number one export destination. On the other hand, the major sources of China's *ICT* imports are Japan (18%), Chinese Taipei (16%), Korea (13%) and Malaysia (8%). *(Source from: OECD)*

It is reported detail products of imoprt and export as well. (See Tab.11) Main imports are Integrated circuits (61.7%) and main exports are automatic data process machines, magnetic reader, etc.

Tab.11 Top 6 Chinese *ICT* import and export items by 4-digit *HS* code (in billion USD), 2004

Main Imports		Main Exports	
8542 Integrated circuits	**61.7**	8471 automatic data process machines, magnetic reader, etc. computer hardware	**59.9**
8471 automatic data process machines, magnetic reader, etc. computer hardware)	**14.5**	8473 parts etc for typewriters & other office machines computer accessories	**24.0**
8473 parts etc for typewriters & other office machines computer accessories	**14.4**	8525 transmission apparatus for radio telephony/telegraphy/broadcasting, television	**21.8**

S*ource: OECD, ITS database*

It is "a big cheese" in China, and a lot of manufacturers, suppliers, distributors, and *TPL*s who want to share this "Cheese" are in a high competitive situation. Efficiency supply chain is very important for them. Well, this cheese has its own characteristics or problems as follow.

5.1.1 Keep up a Steady Increase in Demand

As function of information technology is widely used in economy and military filed, market of Electronic Component is rapidly expend in the world. Since we already step into a new generation of Electronic Component times, many brand new products are produced, which effectively expands the market filed and scope.

By the year 2005, the world market demand for Electronic Components are 300 billion *USD*, which is 15% of the whole Electronic products in the world with an estimated rate

of 10% growing per year. The increasing speed of demand for new type electronic components is the fastest one. It is predict that global electronic information manufacturing market will be up to 1905.5 billion *USD* in 2010. There is 14.7% of this market belonging to electronic components, which is 280 billion *USD*. In the other hand, the world production rate of chip components will be increasing from 1500 billion in 2005 to 2500 billion in 2010, with a rate of 13% growing per year. *(Data from Dai Junli 2005)*

In China, information technology is rapidly developed. Demand for electronic components by the end of 2005 was approximately 42.9 billion *USD*, which is 18% to 20% of total domestic electronic products. Demand for new type of electronic components is approximately 22.9 billion *USD*, which is 60% to 70% of total domestic electronic components. *(Data from Chu Xuejian and Zhou Yuechao, 2006)*

Electronic components productions have reach a plateau of development in China. Output of products in China is 30% of global output, which leaps into the front ranks of the world. Semiconductor devices, integrated circuits and prefabricated circuits are lightspots in Chinese electronic components. In 2006, from January to June, value of gross output of Chinese electronic products accumulates to 62.8 billion *USD*. *(Data from Logistics Technology 2006)*

5.1.2 Intensified Competition and Falling Rate of Sales Profit

For fitting into high speed development, in every electronic company, investments for development and research are increasing all the time. Therefore, periods of development and mass production are greatly cut down. Furthermore, expanding of economics of scale makes this market more competitive. In another hand, price of complete appliances is kept down because of competition, which gives an huge pressure to the price of electronic components as well.

Due to double-acting supraposition of supply and demand, average price of electronic

products leads to decrease uninterruptedly. In contrast, costs of energy, raw material and human resource are continually increasing. Under these conditions, the necessary outcome is a fall in rate of return on sales of electronic products.

5.1.3 Overstock Situation in Electronic Component Market

Overstock situation is a huge problem in Electronic Component Business in the world. As the development of electronic business, there are huge amount of electronic products in the warehouse, which is overstock because of the fast changing market. These kind of overstock makes a lot of hidden troubles and obstacles in Chinese market. It is reported by Dai Junli in 2005 that there are 5.7 *USD* overstock in the market. The main overstocks are from big and middle companies in China. Huge overstocks make cash sedimentation, which reduce the cash flow inside the company. Problems are also in nonfluency information and unrestricting fakes, which influences the overstock products to be consumed.

Another overstock amount is from purchasing. Because some of the electronic components is small piece with higher price. When you are purchasing these kind of products, you will be given a minimum order quantity (*MOQ*) which you do not need all of these during production, even you just need one piece of that to produce. That is another source of overstock.

In this situation, we need a new type of project to solve this problem in 2 different aspects. Therefore, I think that *VMI* can solve the problem of some normal over stock in the supply chain. Due to *VMI* is a integrated management thought, which can efficiently manage inventory. In the other hand, *TPL* can act as a purchasing hub to arrangement the purchase amount which can satisfy all the demand, meanwhile, it can reduce the overstock situations.

5.2 Project of Electronic Component Trade

This project is related with the establishment of Electronic Products Exchange Center (*EPEC*) and function of Bonded Logistics Center (*BLC*), which I have mentioned before. What I'm thinking can be embodied in this project, which can solve overstock problem in Electronic Components Trade and make supply chain more efficiency as well.

It is reported that there will be an International *EPEC* beside Suzhou Bonded Logistics Center, which will be the first one in the whole country, and it is invested by government. This establishment has started at 3rd March, 2008.

In this International *EPEC*, there is an Electronic Product Exchange Market, which includes all kinds of electronic products, such as electronic components, production equipment, raw material…It will attract a lot of famous *OEM*s, *EMS*s and distributors all over the world. What's more, it will become an international electronic fair, which is opened all the time.

Early on 21st Fab.2008, *MII* (Ministry of Information Industry of the People's Republic of China) approved the establishment of *EPEC* in the area of *BLC*, which makes Suzhou become the first city with international electronic product exchange market. In this *EPEC*, there will be offices for approved electronic product suppliers, and price index of Chinese Electronic Product Market, which will be the reference price for the whole country or any related countries.

The area of International *EPEC* is 26000 squeal meters. According to its operation range, there will be a modernization scope economic cycle, which includes international information technology, exchange, fair and so on. Nowadays, some famous manufacturers and distributors want to enter into this center such as, *ADI, NXP, Fuji...* Furthermore, they can establish an international electronic products exchanging bridge by setting up an E-business stage.

Some experts said that by establishing the exchange center, it can service for companies

to make arrangement of global resource well by attracting related companies into the supply chain.

According to the benefits from *EPEC*, electronic companies and *TPL*s in logistics center are attracted as well. For example, this project is on the basic of establishment of *EPEC*. How to get more profits in this competitive world is always the question for managers. With the chances of *EPEC*, Delta can become a "Middleman" to rearrange the structure of supply chain.

5.3 Feasibility Analysis of Project (*VMI* with *TPL* services)

This new business venture will develop a new service for *TPL* companies in China, especially *TPL*s in Suzhou *BLC*. The reason is that they have a location advantage, establishment of *EPEC* brings a lot of business chances and profit to electronic companies and other related partners. Here, for the particular *TPL* company, Delta International Logistics Co., Ltd., who has a priority right to do this business, whether they can get more profits or not depends on their creative services.

5.3.1 Main idea

The main idea is as a *TPL* company to offer a new service for *OEM*, *EMS*, distributors or retailers. Acting as a trading hub, offering special warehouse space for business traders and organizing products outflow will be the main new services for the electronic products business supply chain as well.

I can explain in this way, the normal way is that *OEM* will purchase products from *EMS* or distributors. (See Fig.10). However, with the new services of Delta, who can be a trading hub, dealing with different types of products with unlimited order quantity, and trading with different layers in supply chain. (See Fig.10)
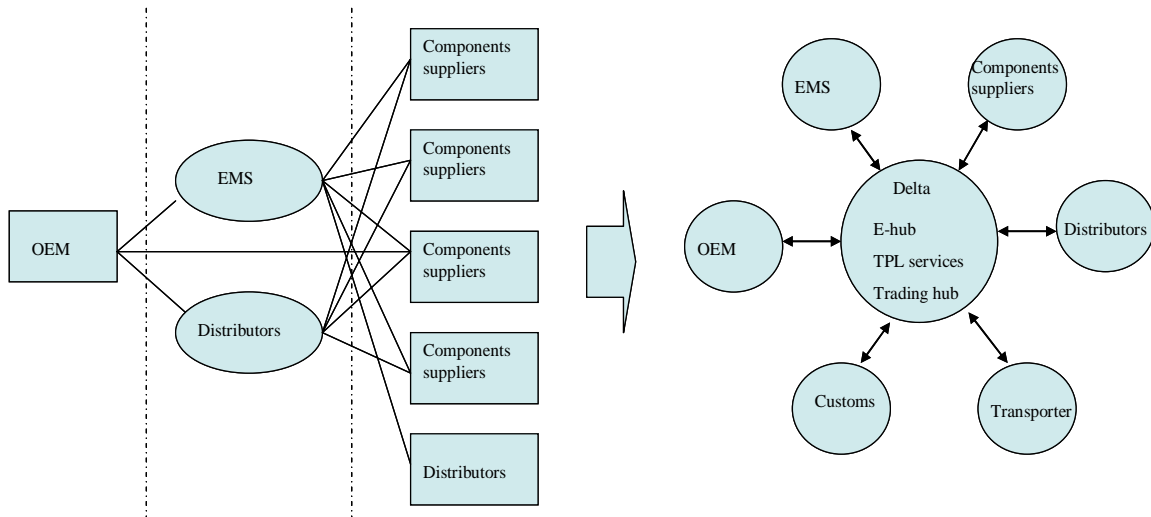
Fig.10 Normal model to a new model

Different functions can be integrated in Delta, such as information hub, purchasing hub, trading hub, transportation hub…Delta has its location, facility, policies advantage, and it is possible to integarted all these functons together to offer creative service methods. Therefore, order of this business will be standard, which make it more efficiency.

According to this project, Delta needs establish their own systems, purchasing system, stock system, transportation system and finance system. These systems are cooperated together with material flow and information flow. As a new service, it should be entered into the other services. It is necessary to have a new group to maintain systems. According to this chance and situation in Delta, I drew a simple system function map to show this new service entering into current system. (See Fig.11)

Since Delta has enough warehouse space to stock products and operate the orders, they need to get necessary information to make it working, for example, order quantity, price, lead time and so on. Information system will be the most important factor inside of company.
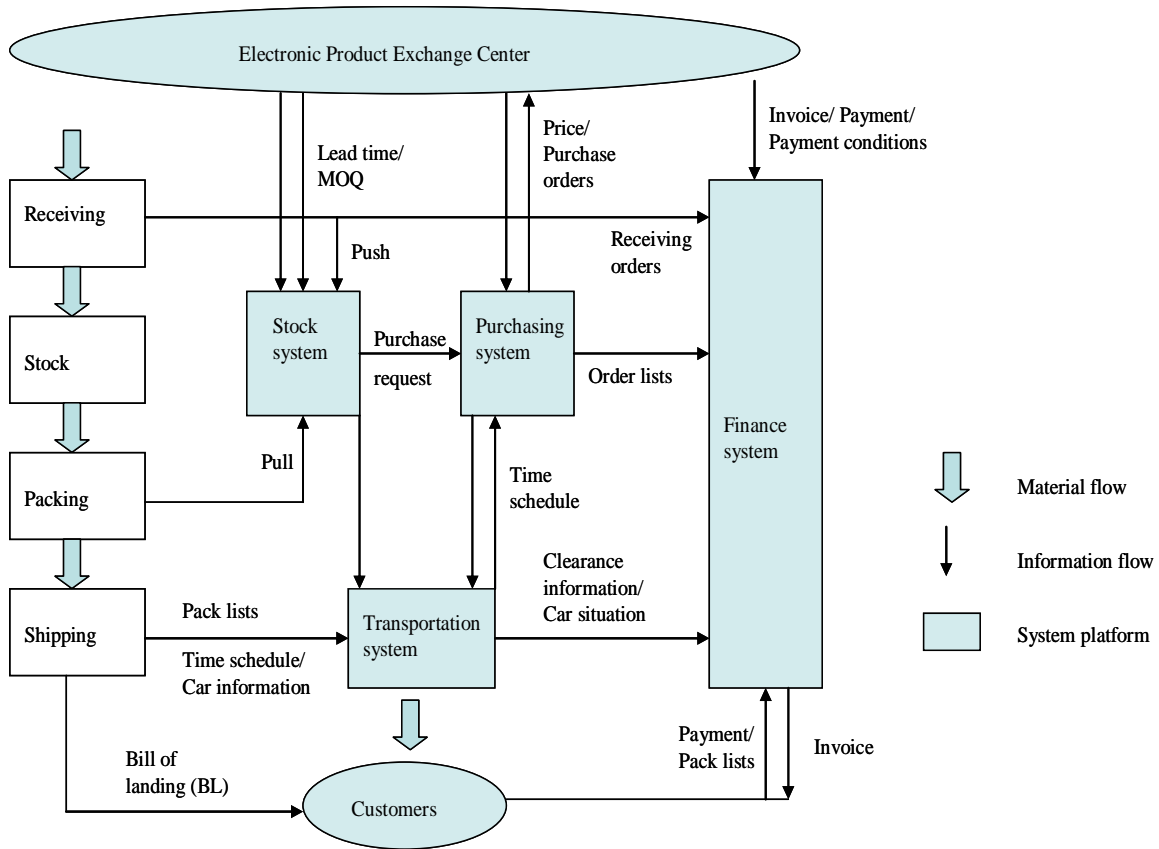
Fig.11 Inside system function map – VMI model in TPL company

VMI model in *TPL* companies can be also understood that *VMI* with *TPL* services. According to the Fig.11, both of *VMI* and *TPL* functions are optimizing the whole supply chain. In Delta, they already have stock system, transportation and finance system. Implement this project will put purchasing system into the whole model. That is to say, their information flow and material flow will be changed.

Coorporation between stock system and purchasing system is the key for the new project, because of new purchasing system entering. However, these 4 systems are connect to each other. If *TPL* companies can offer these kind of services which is complicated to operate, they can get more profits from these actions. In another hand, buyers can reduce their costs by accepting packages of services, and they can focus on their core competitive products or services.

5.3.2 Market

Considering about the establishment of *EPEC*, the electronic products market will be changed. *EPEC* will be one of the biggest trading canters in the whole country. In the other hand, China is a big electronic products manufacturer in the world, and there are huge trading business everyday. Demand keeps on increasing. In China, information technology is rapidly developed. Demand for electronic components by the end of 2005 was approximately 42.9 billion *USD*, with 10% growth each year. *(Data from ChinaEM)* I had already given the market information above. (See Tab.12)

Tab.12 Electronic component market in China (Billion USD)

Year	2005	2006	2007	2008	2009	2010	2011	2012
Revenue	42.9	47.19	51.91	57.10	62.81	69.09	76.00	83.60

"Milddleman" is suggested by Michael Glinski, *CEO* of American II (*AII*). *AII* helps main *OEM* and manufacturers in the world to solve overstock and shortage problems. They offer components, raw materials. When there is changes in the market, they will purchase overstock from *OEM*, offer to other *OEM* or manufacturers who need these. In this way, they can solve overstock problem, in the other hand, they can offer products to the shortage market in a low price. Therefore, unbalance of area, time, usage, upgrade of products will be solved. Here, Delta can be this function, furthermore, Delta can also be a function of *TPL* with warehousing, transportation, and clearance functions, which will bring more profits to itself and to the whole supply chain.

5.3.3 Competitive advantages

All though there are several major competitors in *BLC*, none of them has attempted to offer such package services including purchasing. Some reasons are that they need to consider about the investment and costs inside, and others maybe consider about the warehouse space and management problem.

Survey

For further market research, in Delta, I did a small survey by email to find the demand situation. I sent 50 question mails to different managers of large and small *OEM*s, *EMS*s, and other distributors. There are 33 reply mails, but only 28 mails are valid. These objects are all willing to enter into the *EPEC*, and they want to get more profits inside of this market. After researching, 68% of managers are willing to buy this *TPL* services, because they have overstock problems, which they are always looking for ways to solve. Meanwhile, they also suggest that they need a purchasing hub to exchange the overstock products to shortage products. According to their replying, most of overstock problems are from purchasing. 29% of managers thought that they will consider about it, since they already had a stable system for stock and purchase, but they still want to change. Some manager thought whether they can get a package service including clearance services, transportation services and purchasing services in a lower price or not.

If we assume that Delta can get 1% of the Suzhou market which is 5% of domestic market in the first year, and the market growth is estimated to be 10% which is the rate competing with the distributors in Suzhou (See Tab.13).

Tab.13 First 5 years revenue predict for Delta in Suzhou (*USD*)

Year	1	2	3	4	5
Matket	57100000000	62810000000	69091000000	76000100000	83600110000
Suzhou Market	2855000000	3140500000	3454550000	3800005000	4180005500
Revenue	28550000	31405000	34545500	38000050	41800055

5.3.4 Proforma

Tab.14 First 5 years performas (*USD*)

Year	1	2	3	4	5	NOTES
Sales	28550000	31405000	34545500	38000050	41800055	20% Increase
COSS	14275000	15702500	17272750	19000025	20900027.5	50% of Revenue
Gross Profit	14275000	15702500	17272750	19000025	20900027.5	Sales-COSS
Operating Expenses (O.E.)						
Warehousing	480000	504000	529200	555660	583443	5% Increase
Depreciation cost	388800	408240	612360	918540	1377810	5% Increase
Labor	1434240	1577664	1735430.4	1908973.44	2099870.78	10% Increase
Utilities	172800	181440	190512	200037.6	210039.48	5% Increase
Advertising	600000	630000	661500	694575	729303.75	5% Increase
Admin.	110000	115500	121275	127338.75	133705.69	5% Increase
Misc.	500000	525000	551250	578812.5	607753.13	5% Increase
Total O.E.	3685840	3941844	4401527.4	4983937.29	5741925.83	
Interest on Debt	1500000	1500000	1500000	1500000	1500000	7500000
EBT	9089160	10260656	11371222.6	12516087.71	13658101.67	
Taxes	2726748	3078196.8	3411366.78	3754826.31	4097430.50	Assume 30%
EAT	6362412	7182459.2	7959855.82	8761261.40	9560671.17	

COSS: Costs of Services Sold; Misc.: Miscellaneous; EBT: Earnings Before Tax; EAT: Earning After Tax;

Taxes include Value-added Tax, Turnover Tax, Income Tax and others.

According to the current situation and information inside of Delta, I calculated the first 5 years performas to show values may be brought by this project. (See Tab.14) It is approximate values. The financials in this project look good, but it depends on the investment of this business in Delta.

6 Conclusion

On the basic of other scholars' researches, this paper is established on the formula calculation and real data analysis of *VMI* with *TPL* services in Delta International Logistics Co. Ltd and Multi-Fineline Electronix Inc.

On the supplier side in *VMI* model, it is not easy for them to get profits in the short term. By formula calculation, supplier's logistics costs can be reduced by *TPL* services. As a supplier for American market, *MFLEX* has its own operations of warehousing and transportation. After real data analysis, the costs of these processes can be reduced by *TPL* services.

On the *TPL* side, for having long development in an intense competition, they need to create new services to satisfy the market demand. Offering warehousing services to customers is hot in the market, which is widely used in *BLC*, Suzhou. As a trading hub in Electronic Component Trade which is a new idea, Delta International Logistics Co., Ltd. will obtain benefits through it. Meanwhile, with this *VMI* and *TPL* package service, overstock problem in this industry will be improved.

In my opinion, the most important benchmarking in any business is how much the benefits. In this situation, how to increase profits and reduce costs will always be the researching focus. In my paper, I put the logistics problem in a particular industry, which can clearly show where is the benefits, and where is the costs. In another hand, after researching in different companies, I have learned a lot useful knowledge about business, which will be helpful for my further development. At last, I hope this paper will be useful to the Chinese Logistics Business and Electronic Component Trade.

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Appendix A

Special terms

APICS: American Production and Inventory Control Society

BLC: Bonded Logistics Center

CAWS: China Association of Warehouse and Storage

CGA: Customs General Administration

CSL: Customer Service Level

EMS: Electronic Manufacture Supplier

EOQ: Economy Order Quantity

EPEC: Electronic Products Exchange Center

GDP: Gross Domestic Product

GLC: Gross Domestic Logistics Costs

ICT: Information and Communications Technology

JIT: Just In Time

MFLEX: Multi-Fineline Electronix Inc.

MII: Ministry of Information Industry of the People's Republic of China

MOQ: Minimum Order Quantity

MRP: Material Resource Planning

OCN: China Investment Consulting Net

OECD: Organization for Economic Co-operation and Development

OEM: Original Equipment Manufacturer

RIM: Research In Motion

STCMH: Southern China Medicine Hub

SIP: Suzhou Industry Park

SCM: Supply Chain Management

Appendix B: Survey Mail

Dear Madam/Sir:

This is a survey mail from Delta International Logistics Co., Ltd. in *BLC*. We are glad to inform you that we have new services nearby.

As you all know the establishment of *EPEC*, we will have contracts with them, offering *VMI* including purchasing services. In another word, a package service including clearance, warehousing, transportation, packing, separation, assembling, purchasing services will be offered.

Here are some survey questions for further development and our relationships.

1) Which part are you in the supply chain?

    A *OEM*   B *EMS*   C Distributor   D Components supplier

2) Have you brought our services before?

    A YES   B NO

3) Would you buy our new service?

    A YES   B NO

a) If you answered yes to the question, what would you be willing to pay for the product?

b) What suggestions would make you want to buy our services?

c) If you did not want to buy our services, why?

4) Any other services you want to have?

5) If you are our customer, what kind of factors in our relationship will you pay more attention to?

Thanks for reading!

Looking forward to your answers!

Regards

Suzhou Delta International Logistics Co., Ltd

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Appendix C

RIM MRP Supply Demand

Unconfir med PO	In transit	Need to order this week	push out	need to cancel	hold														
	Buyer	Project/Supplier	Part#/Lead Time		Date	Week													
							wk18	wk19	1	2	3	4	5	6	7	8	9	10	11	12
							28-Apr	5-May	12-May	19-May	26-May	2-Jun	9-Jun	16-Jun	23-Jun	30-Jun	7-Jul	14-Jul	21-Jul	28-Jul
1(4062)	Gao ying	13432#/12589#	HDW-18045-001_1	Demand		21,150	138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	116,909	116,909
	Gao ying	G-Ray Front Frame	HDW-18045-001_1001.36	Open PO		1,000,000	28,000	104,000	84,000	64,000	112,000	96,000	56,000	28,000	228,000	148,000			
	Panasonic Ca	Dome sheet		Delivery Sch				ETA:5/2 60K;5/ETA:5/9 20K;5/13 56K;5/14 28K										
	Gao ying	MPQ:4k/reel	L/T : 8wks (original 10wks)	Stock carry forward		133,371	112,221	2,055	-21,482	-54,391	-101,987	-96,268	-201,468	-327,576	-29,239	1,851	-125,686	-242,595	-343,563
2(4062)	yang jing	13432#/12589#	HDW-13551-001_1	Demand		21,150	138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	116,909	116,909
	yang jing	G-Ray Front Frame	A4N4841B-NL	Open PO		559,000				79,000	480,000		360,000	180,000	330,000	615,000	660,000	420,000	100,967
	yang jing	Tradex	Foam	Delivery Sch														
3(4062)	yang jing	160/668#/16316#	HDW-12189-001_1	Demand		157,198	136,048	167,088	66,968	15,372	200,840	94,559	-6,408	-162,641	-316,749	-446,412	-563,322	-690,859	-807,768	-908,736
	yang jing	13432#/12589#	HDW-12189-001_104915	Open PO		698,000	34,948	97,938	134,021	123,711	113,402	108,247	103,093	97,938	151,546	149,485	125,773	113,402	123,711	113,402
	yang jing	Tradex	Foam	Delivery Sch														
4(4062)	yang jing	MPQ:100k/box, MOC	L/T 3wks with 3 months forecast	Stock carry forward		103,774	68,826	-29,113	-163,133	-58,845	-167,564	-300,549	-656,931	-722,055	-735,924	-1,180,858	-1,647,289	-1,835,941	-1,688,578	-1,538,728
	yang jing	13432#/12589#	ANA-00221-001	Demand		84,600	552,662	510,150	467,637	446,381	425,125	403,869	624,934	616,431	518,652	467,637	510,150	467,637	403,869
	yang jing	G-Ray Front Frame	A4N4841B-NL	Open PO		5,685,000		270,000		90,000	360,000	390,000	180,000	150,000	330,000	615,000	660,000	420,000	165,000
	Gao ying	Panasonic Ca	Foam	Delivery Sch														
	Gao ying	MOQ: 15K;	IC	Delivery Sch														
5(4062)	Gao ying	13432#/12589#	ANA-00251-001	Demand		840,000	138,166	127,537	111,000	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	116,909	100,967
	Gao ying	G-Ray Front Frame	A321 2ELLT-T	Open PO			51,000	60,000	60,000	60,000	69,000	60,000						
	Gao ying	Allegro	IC	Delivery Sch			ETA:5/7											
	Gao ying	MPQ:3k/reel,MOQ:1	L/T: 6-8wks	Stock carry forward		248,730	227,580	140,414	123,877	66,968	15,372	-30,909	-62,876	-159,109	106,783	118,120	1,210	-126,327	-243,236	-344,204
6(4062)	Zhou houhong	13432#/12589#	CAP-01003-010	Demand		14,250,000	315,443	2,051,228	1,891,806	1,732,384	1,652,673	1,572,962	1,498,565	2,325,433	2,295,674	1,934,318	1,743,012	1,881,806	1,732,384	1,498,565
	Zhou houhong	G-Ray Front Frame	GRM155R61A104K4A01D(2113946B04)	Open PO			2,800,000	1,000,000	1,000,000	1,000,000	1,000,000	1,020,000	6,430,000					
	Zhou houhong	Murata	Cap.	Delivery Sch			ETA:5/8 2800M5/13 ETA											
7(4062)	Zhou houhong	13432#/12589#	CAP-00330-003	Demand		2,656,075	2,340,632	3,089,405	2,197,599	1,465,215	812,542	239,580	-238,985	3,865,582	1,569,908	1,745,589	118,306	2,577	-1,889,228	-3,621,612
	Zhou houhong	Murata	Cap.	Open PO		960,000	21,150	138,166	127,537	80,000	80,000	80,000	110,000	200,000	160,000	150,000	116,909	116,909
8(4062)	Zhou houhong	13432#/12589#	CAP-03302-003	Demand		176,618	155,468	177,302	49,765	12,856	-18,740	-45,021	-35,988	107,779	103,671	124,008	7,098	-120,439	-237,348	-338,316
	Zhou houhong	G-Ray Front Frame	GRM155R71A333KA01D	Open PO		1,880,000	42,300	276,331	255,075	233,819	212,562	201,934	120,000	312,467	308,216	259,326	233,819	255,075	233,819	201,934
	Zhou houhong	Murata	Cap.	Delivery Sch			ETA:5/2	330,000	120,000	120,000	120,000	120,000	80,000	120,000	870,000	290,000		
9(4062)	Zhou houhong	MPQ:10K/reel	Cap.	Stock carry forward		393,182	350,882	404,551	149,476	35,657	-67,533	-160,096	-242,030	-434,497	-662,712	-52,039	4,143	-250,932	-484,751	-686,695
	Zhou houhong	13432#/12589#	CON-00083-001	Demand		950,000	21,150	138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	116,909	116,909	100,967
	Long wenxie	G-Ray Front Frame	DF30FB-40DP-0,4V(81)	Open PO			35,000											
	Long wenxie	Sinbon	connector	Delivery Sch			5/10 ETA											
10(4062)	Long wenxie	MPQ:5K/reel	L/T 6-8wks	Stock carry forward		185,916	26,600	-65,937	-182,846	-294,442	-11,690	127,077	102,969	118,306	1,396	-126,141	-243,050	-344,018
	Sun Wieping	13432#/12589#	DIO-100032-001	Demand		12,255,000	209,693	345,000	1,140,000	450,000	1,254,118	1,094,697	993,729	1,544,266	1,525,136	1,286,003	1,158,465	1,254,118	1,147,837	993,729
	Sun Wieping	G-Ray Front Frame	ESD8V0L1B-02LRH;E6433;E6327	Open PO		1,360,400	1,360,400	645,000	1,515,000	1,525,000	2,655,000	15,000	5,430,000	710,000	300,000
	Sun Wieping	Avnet(infineon)	Diode(Singapore/SH=3.7)	Delivery Sch			4/30 ETA	ETA:5/12 165K;5/14 285K										
11(4062)	Sun Wieping	MPQ:15K/R	L/T: 10wks	Stock carry forward		1,429,938	1,565,245	540,727	-607,110	-1,701,807	-2,098,363	-1,577,092	-3,121,358	-4,646,494	-3,277,496	-4,420,962	-185,080	-622,917	-1,316,647
	Huang wei	13432#/12589#	HDW-12188-001_1	Demand		530,000	21,150	138,166	127,537	116,909	111,595	106,281	100,967	154,108	129,663	116,909	127,537	116,909	116,909	100,967
	Huang wei	G-Ray Front Frame	Saturn Front Frame	Open PO			110,000	115,000	100,000	100,000	100,000						
	Huang wei	Bi-link	Can	Delivery Sch			5/11 ETA	5/18 ETA										
12(4062)	Huang wei	MPQ:	L/T 2-3wks	Stock carry forward		193,699	172,549	34,383	16,846	14,937	8,341	2,060	1,093	-155,140	-309,248	-438,911	-555,821	-683,358	-800,267	-901,235
	Gao ying	13432#/12589#	LED-00010-003	Demand		2,781,000	105,750	690,828	637,687	584,547	531,406	504,836	770,539	781,167	648,315	584,547	637,687	584,547	504,836
	Gao ying	G-Ray Front Frame	19-1-18UTD/G548/TR8 (RIM)	Open PO			376,000	370,000	370,000	320,000	320,000	300,000	300,000	280,000	145,000			
	Gao ying	Evlite	LED	Delivery Sch			4/28 ETA	5/5 ETA	5/12 ETA									
13(4062)	Gao ying	MPQ:5K/reel	L/T 4wks	Stock carry forward		777,333	1,047,583	726,755	459,068	194,521	-43,455	-274,861	-479,697	-980,864	-1,606,403	-2,254,718	-2,839,265	-3,476,952	-4,061,499	-4,566,335
	Gao ying	13432#/12589#	LED-00016-002	Demand		1,455,000	63,450	414,497	382,612	350,728	318,844	302,901	468,700	462,323	388,989	350,728	382,612	350,728	302,901
	Gao ying	G-Ray Front Frame	16-213/3T3D-AP1Q2QV/3T(RIM	Open PO			30,000	210,000	225,000	210,000	180,000	168,000	180,000	72,000				
	Gao ying	Evlite	LED	Delivery Sch			5/5 ETA	5/12 ETA										
	Gao ying	MPQ:3k/reel	LED	Delivery Sch			4/28 ETA										
14(4062)	Sun Wieping	13432#/12589#	RES-05110-001	Demand		676,859	643,409	438,912	281,300	140,572	-14,214	-165,058	-287,959	-578,659	-966,983	-1,355,972	-1,706,700	-2,089,312	-2,440,040	-2,742,942
	Sun Wieping	G-Ray Front Frame	RK73H1ETTP5110F	Open PO		12,200,000	274,950	1,796,153	1,657,987	1,519,821	1,450,739	1,381,656	1,312,573	2,031,034	2,003,401	1,685,620	1,519,821	1,657,987	1,519,821	1,312,573
	Sun Wieping	KOA	Res.	Delivery Sch			5/10 ETA	370,000	3,830,000	2,440,000	5,560,000	1,870,000						
	Sun Wieping	MPQ:10K/reel	L/T 8wks	Stock carry forward		2,571,946	2,296,996	500,844	-787,143	-1,523,035	72,297	-1,309,359	-181,932	5,560,000	1,470,000	8,191	-1,649,796	-3,169,617	-4,482,190

RIM MRP Supply Demand

Unconfir med PO	In transit Buyer	Project/Supplier	Part#/Lead Time	(type)	Date	wk18 28-Apr	wk19 5-May	1 12-May	2 wk21 19-May	3 wk22 26-May	4 wk23 2-Jun	5 wk24 9-Jun	6 wk25 16-Jun	7 wk26 23-Jun	8 wk27 30-Jun	9 wk28 7-Jul	10 wk29 14-Jul	11 wk30 21-Jul	12 wk31 28-Jul
15(4062)	Sun Weiping	13432#/12589#	RES-02432-001	Demand	2,070,000	42,300	276,331	255,075	233,819	223,191	212,562	201,934	312,467	308,216	259,326	233,819	255,075	233,819	201,934
	Sun Weiping	G-Ray Front Frame;RK73H1ETTP2432F	Res.	Open PO			5/10 ETA	240,000	580,000		390,000	6/9 ETA	860,000	290,000					
	Sun Weiping	KOA	Res.	Delivery Sch															
16(4062)	Sun Weiping	MPQ10k/reel	RES-02211-002	Stock carry forward	202,658	160,358	-115,973	-131,048	215,133	-8,057	-220,620	-32,554	514,979	206,764	237,437	3,619	-251,456	-485,275	-687,209
	Sun Weiping	13432#		Demand	150,000	3,614	42,512	42,512	42,512	42,512	42,512	31,884	36,136	31,884	21,256	21,256	42,512	42,512	31,884
	Sun Weiping	G-Ray Front Frame;RK73H1ETTP2211F		Open PO			10,000	70,000	70,000		70,000				30,000				
	Sun Weiping	KOA	Res.	Delivery Sch			5/10 ETA												
17(4062)	Sun Weiping	13432#/12589#	SWT-00008-001/SWT-00025-002	Demand	179,660	176,046	133,534	101,021	128,509	85,996	43,484	81,600	45,464	13,580	22,323	1,067	-41,445	-83,958	-115,842
	Sun Weiping	G-Ray Front Frame;EVQP6GB35/EVQP62B35	LT 8wks	Stock carry forward	860,000	21,150	138,166	127,537	116,909	111,595	106,281		156,233	154,108	129,663	116,909	127,537	116,909	100,967
	Sun Weiping	Panasonic Ca	Switch	Open PO			150,000				90,000			490,000	340,000	140,000			
	Sun Weiping		Switch	Delivery Sch															
18(4062)	Sun Weiping	MPQ10k/reel	XDR-00010-001	Stock carry forward	133,982	112,832	124,696	-2,871	-119,780	-141,376	-247,657	-348,624	-504,857	-228,965	-18,628	4,462	-123,075	-239,984	-340,952
	Zhou houhong	13432#		Demand		1,807	21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	10,628	21,256	21,256	15,942
	Zhou houhong	G-Ray Front Frame	KUS0023-010100	Open PO	210,000		20,000		35,000	30,000		10,000		45,000	15,000	15,000			30,000
	Zhou houhong	Hosiden	speaker	Delivery Sch			5/2 ETA										15,000	30,000	
19(4062)	Zhou houhong	MPQ5k/reel	RES-060R4-001	Stock carry forward	883	-924	-2,180	-23,436	-9,693	-949	-22,205	-28,147	-21,215	7,843	12,215	16,587	-4,670	-10,926	3,132
	Sun Weiping	13432#/12589#	RK73H1ETTP60R4F	Demand	2,080,000	42,300	276,331	255,075	233,819	223,191	212,562	201,934	600,000	308,216	290,000	233,819	255,075	233,819	201,934
	Sun Weiping	KOA	resistor	Delivery Sch	940,000		5/10 ETA	240,000	560,000		410,000		600,000		290,000				
20(4062)	Sun Weiping	MPQ10k/reel	RES-02000-002	Stock carry forward	197,284	154,984	138,166	-136,422	-33,431	-245,994	-37,928	-348,624	249,605	211,390	242,063	8,245	-246,830	-480,649	-682,563
	Sun Weiping	13432#/12589#	RK73H1ETTP2000F	Demand	197,225	21,150	510,150	116,909	111,595	106,281	100,967	403,869	616,431	129,663	116,909	116,909	127,537	116,909	100,967
	Sun Weiping	KOA	resistor	Open PO	1,050,000		130,000	280,000			200,000	820,000	1,200,000	640,000	140,000				
	Sun Weiping	KOA	resistor	Delivery Sch			5/10 ETA							300,000					
21(4062)	Sun Weiping	MPQ5k/reel	RES-02740-002	Stock carry forward	93,827	72,677	138,166	-63,026	-11,531	-117,812	-18,779	-28,147	124,988	110,880	121,217	4,307	-123,230	-240,139	-341,107
	Sun Weiping	13432#/12589#	RK73H1ETTP2740F	Demand	940,000	21,150	127,537	116,909	111,595	106,281	100,967	100,967	156,233	154,108	129,663	116,909	127,537	116,909	100,967
	Sun Weiping	KOA	resistor	Open PO			10,000	280,000			210,000		310,000	190,000	150,000				
22(4062)	Sun Weiping	MPQ10k/reel	RES-01001-006	Stock carry forward	198,225	177,075	38,909	-78,628	84,463	-27,133	-24,381	105,278	129,386	8,705	125,615	8,245	-118,832	-235,741	-336,709
	Sun Weiping	13432#/12589#	RK73H1ETTP1001F;ER,J2RKF1001X;	Demand	84,600	552,662	510,150	467,637	446,381	425,125	403,869	624,934	616,431	518,652	467,637	467,637	510,150	467,637	403,869
	Sun Weiping	G-Ray Front Frame	Res	Open PO	4,130,000	450,000	1,120,000						570,000						
	Sun Weiping	KOA	Res	Delivery Sch		5/10 ETA													
23(4062)	Sun Weiping	MPQ5k/reel	RES-078R7-001	Stock carry forward	420,675	336,075	-216,587	-276,737	375,626	-70,756	-495,880	-79,749	495,317	418,886	470,234	2,597	-507,553	-975,191	-1,379,059
	Sun Weiping	13432#/12589#	RK73H1ETTP78R7F	Demand	940,000	21,150	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	116,909	116,909	116,909	100,967
	Sun Weiping	G-Ray Front Frame		Open PO		20,000	280,000		200,000			140,000	150,000						
	Sun Weiping	KOA	Res	Delivery Sch		5/10 ETA													
1(4062)	Gao ying	MPQ2k/reel	LED-00010-001	Stock carry forward	198,957	177,807	39,641	-87,896	95,195	-16,401	-122,682	-23,649	120,118	106,010	128,347	9,437	-118,100	-235,009	-335,977
	Gao ying	ASY-15028-001_C.D	SLSNNWH103TSZR,SLSNNWH13TSZR	Demand	5,160,000	720,000	810,722	907,216	907,216	412,371	412,371	495,317	412,371	371,134	259,326		127,537	116,909	
	Gao ying	Europa Keyboard	LED	Open PO		4/28 ETA	300,000	1,080,000	990,000	285,000	885,000		106,000	796,000	490,000				
	Gao ying	Samsung	LED	Delivery Sch		5/5 ETA	5/12 ETA					-97,008	-404,380						
2(4062)	Gao ying	MPQ15k/reel	LT 6wks with 8wks forecast, and 8wks with	Stock carry forward	105	720,105	209,383	382,167	464,950	315,363				19,486	125,615	19,486	19,486	19,486	19,486
	Long wenxie	ASY-15028-001_C.D	CON-00149-001	Demand		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392	46,392					
	Long wenxie	Europa Keyboard	DF30RB-20DP-0.4V(81)	Open PO	560,000		145,000	195,000		110,000		80,000	30,000						
	Long wenxie	Hirose(Sinbon)	Connector	Delivery Sch		5/10 ETA	5/10 ETA												
4(4062)	Long wenxie	MPQ5k/reel	LT 8wks	Stock carry forward	86,179	86,179	-15,161	-128,563	-96,965	-15,367	-66,914	-118,460	-60,007	-26,398	3,602	3,602	3,602	3,602	3,602
3(4062)	Sun Weiping	ASY-15028-001_C.D	RES-10052-001	Demand	5,580,000	1,013,402	1,134,021	1,134,021	1,134,021	515,464	515,464	463,918	515,464						
	Sun Weiping	Europa Keyboard	RK73H1HTTC1001F	Open PO			3,320,000			360,000		770,000		150,000	490,000				
	Sun Weiping	KOA	resistor	Delivery Sch		5/10 ETA	5/10 ETA												
4(4062)	Sun Weiping	MOQ10k/reel	RES-10053-001	Stock carry forward	848,760	848,760	-164,642	2,021,337	887,317	-246,704	-762,168	-917,632	-663,096	-977,013	2,987	2,987	2,987	2,987	2,987
	Sun Weiping	Europa Keyboard	RK73H1HTTC1500F	Demand											3,602				
	Sun Weiping	KOA	resistor	Open PO															
	Sun Weiping	MOQ10k/reel		Delivery Sch															
5(4062)	Gao ying	ASY-15028-001_C.D	HDW-14711-001_1	Demand	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000
	Gao ying	Europa Keyboard	resistor	Delivery Sch															
	Gao ying	MOQ10k/reel	HDW-14711-001_1	Open PO	376,835	76,835	70,000		290,000	38,000									
	Gao ying	Europa Keyboard	Domesheet	Delivery Sch		ETA 5/2 ETA 5/12 ETA	113,402	113,402	51,546	51,546	51,546	46,392							
6(4062)	Gao ying	ITT TJ		Open PO	117,538	117,538	93,033	49,631	52,827	16,280	734	-50,813	-97,204	-97,204	-97,204	-97,204	-97,204	-97,204	-97,204
	Huang wei	MPQ2k/reel	HDW-15030-001_1	Demand			101,340	113,402	113,402	113,402	51,546	51,546	46,392						
	Huang wei	ASY-15028-001_C.D		Open PO	349,584			93192	82392	44000	180,000	50,000							
	Huang wei	Europa Keyboard					5/11 ETA												
	Huang wei	Bi-link	stiffener	Delivery Sch			5/11 ETA	5/18 ETA											
	Huang wei	MPQ2k/reel	LT 3wks	Stock carry forward	95,297	95,297	-6,043	-26,263	-57,263	-120,665	-48,212	-48,758	-101,305	-147,696	-147,696	-147,696	-147,696	-147,696	-147,696

Unconfir med PO	In transit / Need to order this week / push out / need to cancel / hold	Buyer	Project/Supplier	Part#/Lead Time		Date / Week	28-Apr wk18	5-May wk19	1 12-May wk20	2 19-May wk21	3 26-May wk22	4 2-Jun wk23	5 9-Jun wk24	6 16-Jun wk25	7 23-Jun wk26	8 30-Jun wk27	9 7-Jul wk28	10 14-Jul wk29	11 21-Jul wk30	12 28-Jul wk31
7 (4062)		Sun Weiping	Europa Keyboard	ASY-15028-001_D	Open PO		1,020,000	120,000	30,000	150,000	150,000	150,000								
		Sun Weiping	RES-10198-001	ERJ1GCF3R70C	Demand		202,680	226,804	226,804	226,804	226,804	103,093	103,093	103,093	92,784					
		Sun Weiping	Panasonic/KOA	resistor	Delivery Sch															
		Sun Weiping	MPO/MOQ 15k/reel	LT 6wks/8wks	Stock carry forward		463,995	463,995	381,315	184,510	107,706	30,902	104,717	1,624	318,840	318,840	318,840	318,840	318,840	318,840
8 (4062)		Sun Weiping	ASY-15028-001	RES-10249-001	Demand		990,000	202,680	184,510	107,706	30,902									
		Sun Weiping	Europa Keyboard	ERJ1GEF49R9C/RK73H1HTTC49R9F/CRK	Open PO		990,000	150,000	150,000	150,000	150,000	150,000	100,000	100,000	30,000					
		Huang wei	resistor		Delivery Sch															
		Huang wei	B+link	Spring	Delivery Sch		147,140	133,961	-4,204	-21,742	-28,651	-30,247	-36,528	-37,495	-163,728	-317,836	-447,499	-564,409	-691,946	-808,855	-909,822
		Sun Weiping	MPO2k/reel	Cap	Demand		560,000	13,179	138,166	116,909	116,909	110,000	100,000							
5(4062)		Huang wei	MPO2k/reel	CAP-02R7O-007	Demand		159,924	146,745	138,580	91,042	54,133	22,537	-3,744	-24,711	259,056	104,948	125,285	8,375	116,909	-236,071	-337,038
		Zhou houhong	11951#/13453#	CAP-02R7O-007	Demand		13,179	138,166	127,537	116,909	111,595	106,281	106,281	100,967	156,233	154,108	129,663	116,909	127,537	116,909	100,967
3(4062)		Long wenxie	11951#/13453#	HDW-10275-001_2	Demand		26,358	276,331	255,075	233,819	223,191	212,562	201,934	312,467	308,216	259,326	253,326	233,819	255,075	233,819	201,934
		Long wenxie	G-Ray Front Frame	HDW-10275-001-101581	Open PO		1,950,000	130,000	260,000	130,000	260,000	260,000	130,000	130,000	130,000					
		Long wenxie	Foxlink	connector	Delivery Sch															
		Long wenxie	MOQ 130k/reel	LT- 8wks	Stock carry forward		170,264	143,906	157,775	110,237	41,732	15,451	-15,516	258,251	200,312	240,986	124,480	7,570	7,167	-119,967	-236,876	-337,843	-683,661
4(4062)		Long wenxie	11951#/13453#	CAP-08R80-007	Demand		13,179	-2,425	2,500	127,537	111,595	-64,509	-17,072	-89,006	-271,473	424,000				
		Long wenxie	G-Ray Front Frame	GRM1555C1H6R8BZ01D	Open PO		970,000	130,000	80,000	80,000	80,000	80,000	190,000		150,000					
		Zhou houhong	Murata	Cap	Delivery Sch		13,179	138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	129,663	116,909	127,537	116,909	100,967
		Zhou houhong	MPO2k/reel	LT 8wks	Stock carry forward		146,745	138,580	91,042	118,959	7,363	-98,918	-9,885	-136,118	-290,226	-359,889	-364,336	-476,799	-119,162	-236,071	-337,038
		Zhou houhong	11951#/13453#	IND-01002-010	Demand		13,179	138,166	116,909	111,595	106,281	106,967	156,233	154,108	129,663	127,537	116,909	116,909	100,967
7(4062)		Sun Weiping	G-Ray Front Frame	LLP1005-FH1ONC	Open PO		1,360,000	100,000	150,000	130,000	80,000	80,000	190,000	30,000	60,000	240,000	240,000	560,000	60,000
		Sun Weiping	TOKO	Inductor	Delivery Sch															
		Sun Weiping	MPO10k/reel	LT 12wks	Stock carry forward		132,759	219,580	81,415	103,877	116,968	5,372	-100,909	-11,876	-138,109	-292,217	-478,790	-368,327	-366,327	76,764	35,797
1(4062)		Zhou houhong	13842#/13214#/1606	ASY-12120-001	Demand		34,948	97,938	134,021	123,711	113,402	108,247	103,093	97,938	151,546	149,485	125,773	113,402	123,711	113,402
		Zhou houhong	G-Ray Front Frame	EAS1D1O7AY	Open PO		852,000	140,000	96,000	80,000	120,000	120,000	80,000	68,000	120,000	154,000	154,000			
		Zhou houhong	Panasonic Ca	speaker	Delivery Sch															
2(4062)		Zhou houhong	MPO2k/reel MOQ.. 4LT 8wks		Stock carry forward		94,349	199,401	197,462	143,442	146,328	118,081	82,988	105,050	121,504	126,019	124,480	246	10,309	20,619	-350,270
		Huang wei	13842#/16066	ASY-13747-001_1	Demand		6,907	20,619	20,619	20,619	20,619	20,619	15,464	15,464	17,526	15,464	10,309	10,309	20,619	20,619
		Huang wei	G-Ray Front Frame	ASY-13747-001_104915	Open PO		176,418	349												
		Huang wei	GPG	Front Frame	Delivery Sch															
		Huang wei	MPO.99PCS/reel	LT 8wks	Stock carry forward		1,156	-5,402	-26,021	-25,948	-28,270	-33,345	-38,421	-47,241	-136,647	-47,301	-43,156	-39,012	106,281	-42,386	-51,521
1 (4062)		Huang wei	13214#/16316	ASY-14132-001_1	Demand		28,041	77,320	113,093	103,093	92,784	87,629	82,474	82,474	134,021	134,021	115,464	103,093	103,093	92,784
		Huang wei	Saturn Main Antenna	ASY-14132-001_104915	Open PO		170	12,969	103,158	87,912	67,023	67,023	67,023	64,350	23,166	396	212,562			
		Huang wei	GPG	Front-Frame	Delivery Sch															
		Huang wei	MPO.99PCS/reel	LT 8wks	Stock carry forward		35,708	7,837	-56,514	-66,758	-81,939	-107,699	-143,756	-159,207	-228,878	-339,733	-454,801	-185,752	-206,180	-289,964
1 (4062)		Zhou houhong	12588#	XDR-00011-001	Demand		19,343	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	106,281	95,653	85,025
		Zhou houhong	Saturn Main Antenna	KUS0026-010010	Open PO		1,325,000	10,000		90,000	100,000	100,000		50,000	100,000	100,000	180,000	516,000	50,000	85,000
		Zhou houhong	Hosiden	speaker	Delivery Sch															
2 (4062)		Zhou houhong	MPO5k/reel	CAP-00B60-002	Demand		57,121	37,778	-69,132	-175,413	-171,405	-156,430	-241,455	-329,620	-367,786	-388,821	-313,102	95,617	89,963	89,939
		Zhou houhong	12588#	GRM1555C1H60U201D	Open PO		38,686	233,819	212,562	191,306	180,678	170,050	170,050	276,331	276,331	236,070	212,562	212,562	191,306	170,050
		Zhou houhong	Murata	Cap	Delivery Sch		1,710,000	290,000	100,000	100,000	100,000	100,000	100,000	40,000						
		Zhou houhong	MPO10k/reel	LT 8wks	Stock carry forward		296,269	257,563	313,764	201,202	109,895	29,217	-40,833	-110,883	-347,214	218,385	236,070	5,823	-398,046	-568,096
3(4062)		Sun Weiping	12588#	RES-01101-002	Demand		38,686	233,819	212,562	191,306	180,678	170,050	170,050	276,331	256,455	276,331	212,562	-206,740	191,306	170,050
		Sun Weiping	Saturn Main Antenna	RK73H1ETTP1101F	Open PO		1,860,000		110,000	290,000		540,000		30,000						
		Sun Weiping	KOA	Res	Delivery Sch															
		Sun Weiping	MPO10k/reel	LT 8wks	Stock carry forward		150,221	111,535	-122,284	-224,846	-126,153	-306,831	-476,881	-106,931	-353,262	260,407	222,337	9,775	-202,788	-394,094	-564,144

RIM MRP Supply Demand

Unconfirm need PO	In transit (Buyer)	Need to order this week (Project/Supplier)	push out (Part#/Lead Time)	need to cancel (hold)	Week / Date	wk18 19-Apr	wk19 5-May	1 wk20 12-May	2 wk21 19-May	3 wk22 26-May	4 wk23 2-Jun	5 wk24 9-Jun	6 wk25 16-Jun	7 wk26 23-Jun	8 wk27 30-Jun	9 wk28 7-Jul	10 wk29 14-Jul	11 wk30 21-Jul	12 wk31 28-Jul
4(4062)	Zhou houhong	12588#	CAP-01004-017	Demand	Date	19,343		116,909	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	95,653	85,025	
	Zhou houhong	Saturn Main Antenna	GRM15SR60J105KE19J/GRM15SRR60J105	Open PO	1,080,000	140,000	80,000	60,000	60,000	60,000	70,000	70,000	70,000						
	Zhou houhong	Murata	CAP	Delivery Sch		5/2 ETA	5/12 ETA	5/12 ETA											
	Zhou houhong	MPQ:10k/reel	L/T 10wks	Stock carry forward															
1(4062)	Huang wei	12668#/14138#	HDW-12670-001_2	Demand	411,400	141,021	121,678	144,768	82,834	52,495	27,470	12,445	24,742	236,114	227,079	120,798	104,517	8,663	
	Huang wei	G-Ray Main Antenna,Saturn Main Antenna		Open PO		15,052	103,093	103,093	113,402	113,402	108,247								
	Huang wei	GPG		Delivery Sch				82,720	94,600	85,800	85,800	62,480							
	Huang wei	Frame2-antenna	Frame	Delivery Sch			5/4 ETA	5/11 ETA											
	Huang wei	Woojeon		Open PO											hold				
	Huang wei	MPQ:25k/reel	L/T 4 weeks based on MOQ 40k	Stock carry forward	32,002	23,755	30,033	-24,184	-2,070	-8,256	6,229	6,229	6,229	-2,019	-2,019	-2,019	-2,019	-2,019	-2,019
1(4062)	yang jing	PCB-13328-003_A	PTC5128-12/NC	Demand	63,251	48,199	-54,893	-75,266	-94,068	-121,670	-144,118	-106,380	100	100	100	100	100	100	100
1(4012)	Huang wei	Mamabear WIFI anten	PTC5072-12/A	Open PO	28,000		8,376	7,732	5,155	3,737									
	Huang wei	Power		Delivery Sch			14,000			2,000	12,000								
1(4012)	Huang wei	MPQ:k/reel	L/T 4wks	Stock carry forward	105,000	8,247	722	87,216	42,887	6,186	10,515	8,247	8,247					4,124	
	Huang wei	ASY-14540-001/002/	HDW-10154-001	Demand		7,000	33,000	65,000		25,000									
1(4061)	Huang wei	Electron antenna		Open PO	335	-2,139	3,484	-4,247	-9,402	-11,139	861	861	861	861	861	861	861	861	861
	Huang wei	PCB-13327-004_A	PTC5055-9/A	Delivery Sch	10,000									10,000					
	Huang wei	Mamabear main antenna		Open PO										hold					
	Huang wei	Power		Delivery Sch															
1(4062)	Huang wei	MPQ:5k/reel		Stock carry forward	102,608	102,608	102,608	102,608	102,608	102,608	102,608	102,608	102,608	112,608	112,608	112,608	112,608	112,608	112,608
1(4062)	yang jing	PCB-14180-002_A	PTC5127-12/A	Demand	2,474	47,938	42,526	38,660	29,639	29,639	29,639	1,160							
	yang jing	Mamabear GPS ante	PTC5083-12/NC	Open PO	158,000				82,000	76,000	20,000								
	yang jing	Power		Delivery Sch															
1(4012)	yang jing	MPQ:1k/reel		Stock carry forward	42,344	42,344	-5,594	-48,120	-86,780	-34,419	11,942	2,303	1,143	1,143	1,143	1,143	1,143	1,143	1,143
	yang jing	PCB-14792-005_B	PTC0449-11/A	Demand	1,380,000	148,333	500,000	422,222	333,333	277,778	180,000	260,000	292,000	362,000					
2(4012)	yang jing	HAC antenna		Open PO					960,000	80,000	60,000	290,000							
	yang jing	Power22.2.CP1188	PSA	Delivery Sch															
14(4012)	yang jing	MPQ:1k/reel	L/T 4wks	Stock carry forward	130,172	-18,161	-518,161	-940,384	-313,717	-511,495	-631,495	-351,495							
	yang jing	PCB-14992-001_E	PTC0458-11/A,PTC0458-11B	Demand		287,294	329,412	258,824	141,176	235,294	176,471	176,471	176,471	200,000	200,000	200,000	200,000	200,000	200,000
	yang jing	Antenna,Speaker flex,Comet		Open PO	207,000	31,789	132,000												
	yang jing	Power22.2.CP1237	PSA	Delivery Sch	1,488,000			493,000	415,000	355,000	225,000								
	yang jing	MPQ: k/reel		Stock carry forward	177,917	177,917	-109,377	-438,789	-204,612	69,211	188,917	237,446	60,976	-139,024	-339,024	-539,024	-739,024	-939,024	-1,139,024
2(4012)	yang jing	PCB-14992-001_E	PTC0458-12/A	Demand		140,235	352,941	329,412	258,824	141,176	235,294	176,471	176,471	200,000	200,000	200,000	200,000	200,000	200,000
	yang jing	Antenna,Speaker flex,Comet		Open PO	1,342,000		130,000	402,000	465,000	95,000	260,000								
	yang jing	Power22.2.CP1237	PSA	Delivery Sch															
14(4012)	yang jing	MPQ: k/reel		Stock carry forward	391,560	251,325	-101,616	-301,028	-157,852	165,972	25,678	99,207	-77,264	-277,264	-477,264	-677,264	-877,264	-1,077,264	-1,277,264
	yang jing	PCB-14993-001_C	PTC0501-10/NC	Demand		31,789	63,158	52,632	10,526	52,632	52,632	42,105	52,632	52,632	52,632	7,368			
	yang jing	Antenna,Wifi,Comet		Open PO			55,000	15,000	5,000	90,000									
	yang jing	Power22.2.CP1160	PSA(22.2.cp1523)	Delivery Sch															
	yang jing	MPQ: k/reel	L/T 4 wks	Stock carry forward	1,352	-30,437	-82,016	9,194	13,668	-33,964	3,405	-38,701	-91,332	-143,964	-151,332	-151,332	-151,332	-151,332	-151,332
14(4012)	yang jing	PCB-15033-001_C	PTC0457-7/A	Demand	85,000	195,652	271,739	108,696	86,957	104,348	46,739								
	yang jing	Antenna,GPS,Europe	runing change from PTC0457-7/NC	Open PO	783,000		116,000	265,000	26,000	180,000	130,000	60,000							
	yang jing	Power2K22.2.CP1165	PSA(22.2.cp1522)	Delivery Sch		ETA:5/9 130K,5/12 26K													
	yang jing	MPQ: k/reel	PSA(22.2.cp1522)	Stock carry forward	120,369	35,369	-160,283	-316,022	-220,674	-139,022	-55,761	4,239	4,239	4,239	4,239	4,239	4,239	4,239	4,239
11(K3)	Zhou houhong	POP-16094-005_A	FIL-00165-001 / BLW18EC6ZZT5N1J/BLWI18EGZZ15N1J	Demand	2,360,000	284,536	206,186	309,278	329,897	432,990	329,897	123,711	206,186	453,608	334,021				
	Zhou houhong	Inductor(22.2.CP1446)		Open PO		400,000	206,186	436,000	208,000	344,000			600,000	424,000					
	Zhou houhong	Murata	L/T 8wks	Delivery Sch	229,914	139,192	201,914	308,017	83,027	97,130	-26,681	-232,766	-86,375			3,605	3,605	3,605	3,605
2(K3)	Zhou houhong	MPQ: 4/reel		Stock carry forward	-54,622	ETA:5/2 220K,5/14 ETA	5/21 ETA	5/28 ETA	6/4 ETA										
	Gao ying	POP-16094-005_A	LED-00019-001	Demand	668,638	71,134	51,546	77,320	82,474	82,474	30,928	51,546	113,402	-86,375	83,505	3,605	3,605	3,605	3,605
2(K3)	Gao ying	Harvatek	HT-F166TWX-3322	Open PO		6,588	16,000	100,638	150,000	150,000	58,000	17,412	176,000	84,000					
	Gao ying	LED(22.2.CP1297)	LED/22.2.CP1297	Delivery Sch		4/28 ETD	5/5 ETD	ETD:5/9 51K,5/15 50K	ETD:5/23 50K	ETD:5/30 40K	6/2 18K								
	Gao ying	MPQ: 1 k/reel	L/T 8 wks	Stock carry forward	965	-63,591	-99,137	-75,819	-8,293	33,459	-21,943	-56,077	17,412	113,402	84,000	1,016	1,016	1,016	1,016
3(K3)	Gao ying	POP-16094-005_A	PTC0506-25/NC	Demand	8,892	6,443	9,665	10,309	8,985	10,309	3,866	6,443	521	10,438					
	yang jing	PSA	PSA	Delivery Sch	31,000	8,000	15,000	8,000	10,000	13,531		14,175	10,438						
	yang jing	Fabri	22.2.CP1543	Delivery Sch	9,575	8,683	2,239	7,575	5,265	1,734	-12,441	-18,884	-33,060	-43,498	-43,498	-43,498	-43,498	-43,498	-43,498
	yang jing	MPQ: 10 k/reel	L/T 2 wks	Stock carry forward	-8,575	-6,142	-76,161	85,025											

Appendix D

Short Item Number	Item Number	Description	UM	Branch/Pl	Quantity	Unit Cost Standard -	Extended Dollars Standard - Burdened
358310	0185923C04	40 Pin Connector	EA	4062	62075	0.9225	57264.19
474741	0201YC101KAT2A	Cap,100pF,16V,10%,X7R,0201	EA	4062	53532	0.0643	3442.11
330077	04025A101JAT2A	Cap, 0402 100pF 50V 5%	EA	4062	9055	0.0326	295.19
330106	04025A330JAT2A	Cap, 0402 33pF 50V 5%	EA	4062	8820	0.0326	287.53
186520	0402YC103KAT2A	CAP, X7R	EA	4062	8350	0.0163	136.11
137787	0402ZD104KAT2A	Cap, 0.1uF, 10V, 0402	EA	4062	8585	0.0668	573.48
330093	06036D225KAT2A	Cap, 2.2uF, 0603, Cer, X5R	EA	4062	3525	0.3163	1114.96
359700	0613952Q25	Res, 10 Ohm, 0402	EA	4062	107190	0.0037	396.6
332785	0613952Q33	Resistor	EA	4062	1792139	0.0036	6451.7
412890	0613952Q37	RES 0402 5% 33OHM	EA	4062	1723852	0.0036	6205.87
368956	0613952Q53	Resistor	EA	4062	124000	0.0054	669.6
355848	0613952Q89	Res, 4.7K Ohm, 0402	EA	4062	115691	0.0028	323.93
360479	0613952Q91	Res, 5.6K, 5%, 0402	EA	4062	37472	0.0028	104.92
350828	0613952Q95	Resistor	EA	4062	1005	0.0038	3.82
357333	0613952R04	Resistor	EA	4062	49792	0.0037	184.23
455822	0613952R06	Resistor	EA	4062	1	0.0006	
375460	0613952R14	Resistor	EA	4062	72052	0.0045	324.23
462328	0613952R17	Res, 47K, 1/16W, 5%, 0402	EA	4062	175	0.0005	0.09
375478	0613952R22	Resistor	EA	4062	72666	0.003	218
347055	0613952R34	RES, MF, 240KOHM,5%, .0625W,	EA	4062	120000	0.0056	672
332515	0613952R43	Res 0402 560K	EA	4062	210724	0.0036	758.61
304354	0613952R56	Res 0402, 2M Ohm, 5%	EA	4062	190942	0.0036	687.39
356331	0613952R61	Res, 3.3M Ohm, 5%, 0402	EA	4062	177031	0.0036	637.31
304320	0613952R66	Res 0402, 0 Ohm	EA	4062	149004	0.0028	417.21
332646	6.60E+06	Resistor	EA	4062	7812	0.0122	95.31
242384	0662057M34	Resistor, 0402, 22 ohm	EA	4062	1597	0.0037	5.91
157286	0662057M98	Resistor 0402, 10 K Ohm	EA	4062	17905	0.0082	146.82
480083	0662057N01	Resistor,0402,12k,1/16W 5%	EA	4062	20869	0.0038	79.3
242405	0662057N23	Res 100K ohm 5% 040L	EA	4062	17764	0.0057	101.25
370693	7.72E+06	Alternate Ground Contact	EA	4062	16635	0.8999	14969.84
377908	0903564C03	Connector, Camera Socket	EA	4062	101622	2.6961	273983.07
410667	0915254H04	Switch	EA	4062	40834	2.3618	96441.74
394484	0971457D01	connector	EA	4062	33479	2.7295	91380.93
445659	0971726C07	Connector	EA	4062	38015	1.2249	46564.57
490679	0971961L01	Connector 21Pin	EA	4062	682	1.649	1124.62
370571	0975073B01	EMU Connector	EA	4062	38383	0.61	23413.63
370589	0975675A01	Audio Jack	EA	4062	216	1.2851	277.58
489029	0975675A02	Connector, Aud Cust 0 Row Jc	EA	4062	49936	1.1774	58794.65
289916	0987817K07	34 Pin Connector	EA	4062	123017	1.4792	181966.75
316531	0988248Y01	Connector 17 Pin ZIFF	EA	4062	42784	1.2272	52504.52
316611	0988252L01	Socket Coin Cell Battery	EA	4062	296524	0.5075	150485.93
289852	0988866N01	Connector	EA	4062	64341	1.4225	91525.07
437739	0988866N07	Connector	EA	4062	65338	0.8104	52949.92
435784	0989245Y02	SMD Under 2 5 HGT	EA	4062	16653	1.6595	27635.65
435910	0989851N06	Connector	EA	4062	88802	0.8612	76476.28
460402	1000-0051.1	Cap,0402,1.0uF,X5R,6.3V +/-1	EA	4062	257191	0.0205	5272.42
477845	1000-0087.1	Diode SOD-523	EA	4062	165602	0.1041	17239.17
460429	1000-0178.1	Res 0201 560ohm +/-5%	EA	4062	328594	0.0078	2563.03
460331	1000-0282.1	Diode, High Speed	EA	4062	378719	0.1156	43779.92
473166	1000-0334	Cap 0603 1.0uF	EA	4062	804	0.0205	16.48
460437	1000-0336.1	Cap 0402 1000nF 10V +/-10%	EA	4062	148558	0.0065	965.63
460445	1000-0378.1	Res 0201 10ohm 5%	EA	4062	555175	0.0078	4330.37
460728	1000-4039.1	Res 0201 330ohm 5%	EA	4062	208308	0.0078	1624.8
460701	1000-4228.1	Res 0402 33ohm 5%	EA	4062	196576	0.0026	511.1
460411	1000-6839.1	Cap 0201 7nF X7R 6.3V +/-10%	EA	4062	65050	0.0089	578.95
460517	1000-6901.1	Cap 0402 2.2uF 6.3V +/-20%	EA	4062	127084	0.0917	11653.6
460461	1000-7609.1	Diode schottky0, SOD 523	EA	4062	3174	0.1123	356.44
479955	1000-7708.3	11PIN M2 Memory Holder	EA	4062	7552	2.1765	16436.93
456788	1000-8971.1	Conn shield	EA	4062	60397	0.2129	12858.52
241411	1001AS220M=P5	Inductor Power 22Uh +/-20%	EA	4062	3382	1.82	6155.24
487111	109-00113-01	Thermistor 10k 0402	EA	4062	5483	0.1359	745.14
476762	109-00127-01	Resisitor,330OHM,1W,2512SMD	EA	4062	4233	0.7265	3075.27
438539	114S0527	Resistor	EA	4062	147372	0.247	36400.88
501631	116S0077	RES 0402 3.0K OHM 5% HF	EA	4062	536930	0.0028	1503.4
424031	1170315D60	PSA	EA	4062	1042	0.0309	32.2
424049	1170315D61	PSA	EA	4062	270	0.0286	7.72
328866	117S0002	RES, MF, 1/20W, 0.0 OHM, 5	EA	4062	49847	0.0108	538.35
328874	117S0004	RES 0201 10OHM 5% HF	EA	4062	211113	0.0106	2237.8
328891	117S0006	RES, MF, 1/20W, 1K OHM, 5	EA	4062	20000	0	
328903	117S0007	RES, MF, 1/20W, 10K OHM, 5	EA	4062	848530	0.0108	9164.12
328920	117S0009	RES 0201 1M OHM 5% HF	EA	4062	261930	0.0106	2776.46
382580	117S0056	Res, MF, 1/20W, 2.2 Ohm, 5	EA	4062	1090000	0.0117	12753
328962	117S0082	RES 0201 3.3K OHM 5% HF	EA	4062	913382	0.0106	9681.85
368868	117S0101	RES 0201 4.7 OHM 5% HF	EA	4062	184178	0.0106	1952.29
328997	117S0103	RES, MF, 1/20W, 470 OHM, 5	EA	4062	20000	0	
379452	117S0104	Res,mF,1/20W,4.7K Ohm,5	EA	4062	1340000	0.0117	15678
329009	117S0105	RES 0201 47K OHM 5% HF	EA	4062	181050	0.0106	1919.13
355549	117S0129	Res, MF, 1/20W, 68K Ohm, 5	EA	4062	188608	0.0109	2055.83
372963	1188432Z16	Adhesive	EA	4062	78730	0.6907	54378.81
252312	1189617N04	Adhesive Speaker Razor	EA	4062	20504	0.0472	967.79
370837	118S0011	RES 0201 100OHM 1% HF	EA	4062	507708	0.0134	6803.29
368964	118S0013	RES 0201 10K OHM 1% HF	EA	4062	688275	0.0134	9222.89
353931	118S0014	RES 0201 100K OHM 1% HF	EA	4062	1810983	0.0134	24267.17
379698	118S0118	Res,mF,160 Ohm,1,1/20W,0201	EA	4062	660000	0.0156	10296
329025	118S0174	RES, MF, 2.0KOHM,1,1/20W	EA	4062	540000	0.0156	8424
399605	118S0192	Res,MF,22.0 Ohm,1,1/20W,0201	EA	4062	1190000	0.0156	18564
379305	118S0193	Res,MF,220OHM,1,1/20W,0201	EA	4062	640000	0.0156	9984
379487	118S0196	Res,mF,220K Ohm,1,1/20W	EA	4062	5460000	0.0156	85176
384008	118S0258	Res,mF,280 Ohm,1,1/20W,0201	EA	4062	770000	0.1875	144375
369211	118S0271	RES 0201 294K OHM 1% HF	EA	4062	260207	0.0134	3486.77
379356	118S0280	Res,MF,30.1K Ohm,1,1/20W,020	EA	4062	640000	0.0156	9984
447507	118S0392	RES 0201 47OHM 1% HF	EA	4062	179469	0.0134	2404.88
369094	118S0394	RES 0201 4.7K OHM 1% HF	EA	4062	185996	0.0134	2492.35

480059	118S0420	RES MF 51.1KOHM 1 1/20W 0201	EA	4062	5221	0.0037	19.32	2
332195	118S0442	Res,MF,56.2 Ohm,1,1/20W	EA	4062	34336	0.0134	460.1	
401875	118S0449	RES,MF,5.76KOHM,1,1/20W,0201	EA	4062	450000	0.0277	12465	
456374	1200-1037.2	Card Conn SIM	EA	4062	40	1.9203	76.81	
498451	1200-1037.3	Conn X1002	EA	4062	41760	1.831	76462.56	
457422	1200-1738.1	Conn 40pin B2B	EA	4062	48909	1.0929	53452.65	
456382	1200-1923.2	Conn x1001	EA	4062	66066	2.6542	175352.38	
457203	1200-2065.1	Diode, 0.28V	EA	4062	831199	0.1714	142467.51	
460470	1200-2072.2	Input Switch	EA	4062	37244	0.6694	24931.13	
456796	1200-2110.1	Conn 22pin B2B	EA	4062	34571	1.0646	36804.29	
460496	1200-2114.1	Mode Switch Slide	EA	4062	86146	1.8162	156458.37	
457414	1200-2263.1	Conn 80 pin b-b	EA	4062	481994	2.3805	1147386.72	
460509	1200-2975.1	Dome sheet	EA	4062	54519	3.254	177404.83	
424073	1200-2976	Plastic Stiffener	EA	4062	1000	1.6237	1623.7	
461608	1200-2976.2	Plastic Stiffener	EA	4062	17323	1.3562	23493.45	
459727	1200-4651.1	Conn 80pin Plug	EA	4062	463478	2.3805	1103309.38	
460488	1200-5025.1	Switch	EA	4062	26518	0.441	11694.44	
460322	1200-5242.2	LED 1.6*0.8*0.25mm blue	EA	4062	479866	0.3875	185948.08	
509780	1200-5607.1	Red LED	EA	4062	206285	0.2112	43567.39	
460306	1200-8900.2	LED 1.6*0.8*0.3mm blue	EA	4062	138851	0.3819	53027.2	
474257	1201-1217.1	Navigation Domefoil	EA	4062	154075	0.9196	141687.37	
493984	1201-1218.3	Navigation ESD Metal Foil	EA	4062	96965	0.4095	39707.17	
473684	1201-1227.1	connector,b-b,16-pin plug	EA	4062	261801	0.8622	225724.82	
473692	1201-1285.1	Main Keypad Domefoil Assembl	EA	4062	105513	0.9699	102337.06	
490994	1201-1287.3	Main Keypad ESD Metal Foil	EA	4062	45203	0.4095	18510.63	
496704	1201-4594.1	Conn 8 Pin Camera Socket	EA	4062	168461	2.5548	430384.16	
449115	1201-5017	24 pin b-b connector recepta	EA	4062	2000	1.2641	2528.2	
500929	1201-5017.1	Conn 24 pin b-b	EA	4062	241962	1.1999	290330.2	
473668	1201-5208.1	SMD Dome Switch(3x)	EA	4062	486951	0.2945	143407.07	
447689	1201-6608	IC	EA	4062	395	7.1167	2811.1	
460314	1201-6608.1	IC 24pin D1100	EA	4062	57125	6.8557	391631.86	
507282	1210-1551.1	Mic 4Pin	EA	4062	114746	3.0822	353670.12	
514651	1211-9570.1	Polyimide Tape	EA	4062	263000	0.1755	46156.5	
329703	131S0128	CAP 0201 27PF NP0/COG 25V 5%	EA	4062	2234830	0.0078	17431.67	
353949	131S0130	Cap 0201 47PF COG 25V +/-5%	EA	4062	51132	0.0085	434.62	
353957	131S0138	Cap 0201 33PF COG 25V +/-5%	EA	4062	13709	0.0085	116.53	
379410	131S0191	Cap,Cer,COG,0.6pF +/-.1pF,25	EA	4062	120000	0.0123	1476	
329738	132S0097	Cap 0201 0.01uF X5R 10V +/-1	EA	4062	38616	0.0085	328.24	
329746	132S0099	CAP 0402 0.1UF X5R 16V 10% H	EA	4062	58152	0.0064	372.17	
329033	132S0121	Cap 0201 0.1uF X5R 6.3V +/-1	EA	4062	157002	0.012	1884.02	
377895	132S0183	CAP 0402C 0.01uF X5R 25V 10%	EA	4062	3043	0.0085	25.87	
371119	132S0190	Cap 0402 0.01uF X7R 50V +/-1	EA	4062	257294	0.0057	1466.58	
329842	138S0541	Cap 0402 1.0uF X5R 6.3V +/-1	EA	4062	20000	0.0199	398	
353914	138S0555	Cap 0603 1.0uF X5R 25V +/-10	EA	4062	6273	0.0263	164.98	
367478	138S0577	Cap 0402 2.2uF X5R 4V +/-20%	EA	4062	159214	0.083	13214.76	
398750	138S0604	Cap 0402 2.2uF X5R 6.3V +/-2	EA	4062	1980000	0.083	164340	
414625	152S0303	Inductor	EA	4062	10000	0		
412654	152S0304	Inductor	EA	4062	9300	0		
379663	152S0466	Ind,PWR,WW,33uH,10%,160MA	EA	4062	126000	0.3678	46342.8	
381430	152S0482	Ind,Film,HF,5.1NH,3%,140MA	EA	4062	220000	0.0892	19624	
388172	152S0489	Inductor 0603 470NH +/-2%	EA	4062	110252	0.2767	30506.73	
388287	152S0490	IND 0603 390NH 5% HF	EA	4062	421622	0.4897	206468.29	
481596	152S0676	IND 0603 72NH 5% HF	EA	4062	225371	0.2555	57582.29	
502377	152S0844	IND 0603 470NH 2% HF	EA	4062	492192	0.2767	136189.53	
374168	155S0220	FLTR 0402 120OHM 1.5A 0.095	EA	4062	93863	0.0908	8522.76	
397247	155S0285	FLTR 0201 600 Ohm 100MA	EA	4062	165000	0.0404	6666	
381456	155S0294	Fltr,Mult,Bandpass,Blncd	EA	4062	88000	1.0188	89654.4	
430481	155S0310	FLTR,CMN MODE,90 OHM,	EA	4062	113	0.2769	31.29	
397431	155S0322	FLTR 0402 900HM 100MA HF	EA	4062	215519	0.2555	55065.1	
501622	155S0395	FERR 0402 120OHM 1.5A HF	EA	4062	3820	0.0908	346.86	
367507	197S0181	XTAL,24MHZ,60ppm,16pF	EA	4062	8344	3.5923	29974.15	
251926	1PS79SB30	Diode	EA	4062	1870	0.163	304.81	
239564	2113743N26	Capacitor	EA	4062	19131	0.0098	187.48	
157219	2113928N01	Cap 0402, 0.1 uF/6.3V or 10V	EA	4062	202380	0.0106	2145.23	
378169	2113944A09	Capacitor	EA	4062	63342	0.0064	405.39	
271249	2113944A25	Cap 10pF 50V 5% 0402 Lead Fr	EA	4062	15395	0.0066	101.61	
363987	2113944A26	Capacitor	EA	4062	139756	0.0057	796.61	
451389	2113944A29	Capacitor	EA	4062	58141	0.0068	395.36	
362571	2113944A31	Cap, 33pF, 50V, 0402	EA	4062	390468	0.0072	2811.37	
358782	2113944A32	Cap, 39pF, 0402, 5%, 50V	EA	4062	139757	0.0065	908.42	
350836	2113944A36	Capacitor	EA	4062	528434	0.0061	3223.45	
437747	2113945B04	Capacitor	EA	4062	132006	0.0079	1042.85	
277106	2113946B04	Cap 0402, 0.1 uF/6.3V or 10V	EA	4062	210940	0.0092	1940.65	
289908	2113946D05	Cap 2.2uF 16V 10% 0603	EA	4062	25436	0.069	1755.08	
314413	2113946D07	Cap 0603 4.7uF	EA	4062	61955	0.0705	4367.83	
189501	2113946S35	Cap 1uF 16V 10%	EA	4062	3189	0.0215	68.56	
356146	2113956A51	Cap, 1.0uF, 6.3V, 0402	EA	4062	142942	0.0294	4202.49	
323248	2113956B33	Cap, 0603, 16V, 2.2uF, +/- 1	EA	4062	81632	0.1047	8546.87	
332540	2170282A03	Capacitor	EA	4062	5917	0.1222	723.06	
256911	2187639Y02	Cap, 3.3nF, 100V, 0603	EA	4062	3985	0.0151	60.17	
196808	2187893N01	Capacitor	EA	4062	14949	0.0298	445.48	
303538	22-23-2051	Connector 5 Pin	EA	4062	6000	0		
376930	2413954B20	Inductor	EA	4062	6870	0.0262	179.99	
481545	2488090Y25	INDUCTOR, 100NH, 10%	EA	4062	164646	0.0679	11179.46	
359275	2488140Y01	Inductor, 330UH, 146MA, AIR	EA	4062	9000	1.0026	9023.4	
437755	2489828Y17	Fixed Conductor	EA	4062	66818	0.028	1870.9	
465457	2.57E+07	FLTR, CMN MODE, 90OHM, 100MA	EA	4062	32068	0.5478	17566.85	
294926	2771060D01	Keypad Chassis	EA	4062	80	1.0513	84.1	
344081	2771060D02	Keypad Chassis	EA	4062	447	1.0513	469.93	
435821	2871498B01	Connector	EA	4062	63065	1.5911	100342.72	
436251	2871498B02	Connector	EA	4062	1683	0.8133	1368.78	
364921	2871727C01	Connector	EA	4062	178	2.039	362.94	
363186	2871727C02	40 Pin Connector	EA	4062	27712	1.6353	45317.43	
375996	2871727C03	Conn 70pin 4mm 0.90mm	EA	4062	41906	2.501	104806.91	
359638	2871727C04	Connector, 24 Pin BTB	EA	4062	504	1.1786	594.01	
435813	2871748B01	Connector	EA	4062	381	1.5571	593.26	
437763	2871748B04	Connector	EA	4062	59111	0.8417	49753.73	
347071	2875259A01	Connector	EA	4062	65758	2.271	149336.42	
376711	2875581A01	50 Pin Connector	EA	4062	56362	1.4556	82040.53	
300548	2888867N01	Connector	EA	4062	2538	1.1618	2948.65	

436200	2888867N04	Connector	EA	4062	246	0.9721	239.14	3
393182	2888867N05	connector	EA	4062	37865	0.8774	33222.75	
435928	2888867N10	Connector	EA	4062	42665	2.0709	88354.95	
330456	2889852N02	Connector, plug, B to B	EA	4062	8945	1.4685	13135.73	
376737	2889852N05	Connector, 30 Pin	EA	4062	33648	0.9721	32709.22	
368454	335S0436	IC,EEProm,Serial,8KB,DFN	EA	4062	9967	2.1051	20981.53	
353762	337S3284	IC,UCTLR,32-Bit,LPC2221	EA	4062	775	14.5301	11260.83	
359911	343S0390	IC,ASIC,MARIP	EA	4062	7799	3.8079	29697.81	
359865	343S0402	IC,ZHPHYR,FBGA49	EA	4062	4891	17.0995	83633.65	
369609	353S1495	IC, Op-Amp, Dual R-R 10 MHZ	EA	4062	5326	2.3248	12381.88	
473879	353S1932	IC OP-AMP R-R 10MHZ	EA	4062	233825	1.8453	431477.27	
369262	376S0483	XSTR,FET,N-CH,20V,210MA,W/ES	EA	4062	52718	0.3269	17233.51	
443784	376S0575	XSTR N-CH 20V OOMA CST3	EA	4062	12168	0.2831	3444.76	
446168	377S0045	SUPPR TRANS LOW CAP 12V SOT9	EA	4062	60928	0.5046	30744.27	
396391	377S0052	Suppr,Trans,Varistor,12.8V	EA	4062	1090443	0.1816	198024.45	
475161	377S0061	VARISTOR 6.8V 100PF 0201	EA	4062	161702	0.0632	10219.57	
475153	377S0062	VARISTOR 8V 100PF 0201	EA	4062	375550	0.0632	23734.76	
369633	378S0191	LED, Narrow, IR, 10MW, 850NM	EA	4062	265342	1.6039	425582.03	
369668	385S0042	IC, Light to Digital, 12C,Co	EA	4062	52319	4.1411	216658.21	
369676	385S0051	Diode, Photo, Fast Pin, CD/D	EA	4062	278893	1.3579	378708.8	
443792	385S0052	IC W/ADC I2C AND GAIN ODFN6	EA	4062	242600	2.484	602618.4	
391321	386-11627-01	Fill Needle, 18 Gage, Lure	EA	4062	1300	2.0741	2696.33	
465431	3903537C20	4 PIN CONNECTOR	EA	4062	4000	1.2438	4975.2	
435805	3.90E+07	Connector	EA	4062	19076	3.242	61844.39	
369502	3975410B01	Contact	EA	4062	14304	4.5315	64818.58	
442829	4071093D01	Switch	EA	4062	386195	0.6394	246933.08	
410464	4071814B02	Gatwick El Dome Array	EA	4062	631	15.6132	9851.93	
388990	4075809B01	Detector Switch	EA	4062	37278	1.2149	45289.04	
267581	4087706Y04	Dome Array	EA	4062	3621	13.7604	49826.41	
338781	47337-0001	Socket and Shield	EA	4062	1216	2.9388	3573.58	
489176	4790-92-09039	PSA 4790-92-09039-04(die cut	EA	4062	15250	0.0201	306.53	
357368	4805656W65	Diode	EA	4062	47138	0.1709	8055.88	
358299	4805656W76	5.6V Zener Diode	EA	4062	35412	0.0847	2999.4	
437771	4809007R02	15kV quad pack zener	EA	4062	61559	0.3075	18929.39	
326801	4809948D48	Diode Shtky 250V	EA	4062	19936	0.0778	1551.02	
400442	4870370A42	LED	EA	4062	88215	0.2877	25379.46	
358512	4875676A01	Quad Pack Zener For EMU	EA	4062	33236	0.6538	21729.7	
349325	4885102C31	LED, White 3.4V	EA	4062	68139	7.385	503206.52	
437780	4885102C37	LED	EA	4062	223545	0.9225	206220.26	
360444	4.89E+18	SIM Filter	EA	4062	114	0.8124	92.61	
464278	4.89E+22	EMI FLTR,3DB IL,VFBGA,FILTER	EA	4062	51338	0.8219	42194.7	
438299	4888000Z01	LED	EA	4062	42165	0.2107	8884.17	
319468	4888112M10	LED Sidekey	EA	4062	6017	0.7148	4300.95	
436226	4888112M21	Chip LED, Blue	EA	4062	67715	0.5612	38001.66	
269659	4888938N01	IC SOT	EA	4062	22295	0.8551	19064.45	
316558	4889116N01	Diode	EA	4062	6200	0		
435792	4889251U06	Diode, SOT723-HTO, 55, P3, F	EA	4062	11749	0.3109	3652.76	
288024	500024-1681	Connector	EA	4062	2284	1.0892	2487.73	
218034	500024-2411	Connector	EA	4062	5607	1.6568	9289.68	
247265	500024-4001	Connector	EA	4062	330	2.5552	843.22	
222447	500024-4002	Connector	EA	4062	1714	4.5641	7822.87	
261913	500024-4071	Conn,H=0.95 Dual Row,Lead Fr	EA	4062	3863	1.5162	5857.08	
296631	500027-3041	30 Pin Connector	EA	4062	713	1.4706	1048.54	
397651	501591-2211	CONN,B2B,0.40MM,0.9MM	EA	4062	185	1.4345	265.38	
364939	501594-5001	Connector	EA	4062	7685	3.1684	24349.15	
417341	501594-5011	Connector	EA	4062	154	3.073	473.24	
269034	5064151H01	Receiver / Mic	EA	4062	24417	3.4504	84248.42	
284947	5064151H03	Speaker	EA	4062	2450	9.7804	23961.98	
406254	5.07E+07	MIC	EA	4062	21832	3.48	75975.36	
356040	5.07E+07	Speaker	EA	4062	1500	2.6688	4003.2	
380162	5.07E+08	Speaker	EA	4062	1281	2.4485	3136.53	
402448	5.07E+09	Speaker	EA	4062	19198	2.6688	51235.62	
108775	5.09E+07	RECEPTICAL	EA	4062	528	3.7492	1979.58	
433391	5088902Y01	Pioneer Receiver	EA	4062	6923	3.3473	23173.36	
275506	5088922L01	Res 0402 56K OHM	EA	4062	4674	0.0041	19.16	
217795	5089574N02	Speaker, High temp capable	EA	4062	670989	3.1013	2080938.19	
357384	5114007M39	IC	EA	4062	46235	0.3028	13999.96	
252208	51338-0204	20 Pin Plug	EA	4062	50004	2.062	103108.25	
252638	51338-0274	20 Pin Plug Conn Lead-Free	EA	4062	5721	2.062	11796.7	
283637	51338-0674	REC .40 MM SMD DUAL ROW	EA	4062	20837	3.687	76826.02	
373667	514S0145	Conn,Rcpt,I/O,0.5mmPtch,30P	EA	4062	2048	5.0293	10300.01	
460808	514S0165	Conn, 30 PIN, 0.5mm, 3.2mm	EA	4062	1713	4.8614	8327.58	
476367	514S0207	CONN, RCPT, IO, 30P, P=0.5, RA, BL	EA	4062	1300	2.0581	2675.53	
497791	514S0227	CONN, RCPT, AUDIO, 3.5MM, 6P, FPC	EA	4062	209	1.7743	370.83	
372541	516S0519	Connector	EA	4062	233	1.0171	236.98	
431193	516S0574	Connector	EA	4062	12818	0.8263	10591.51	
445464	516S0604	CONN 42P P=0.4 H=0.8	EA	4062	188956	2.1291	402306.22	
481529	516S0654	CONN B2B 10P P=0.4 H=0.9	EA	4062	91780	0.8516	78159.85	
400493	5187970L65	IC	EA	4062	22926	2.8056	64321.19	
435944	5187970L78	IC	EA	4062	48157	3.7833	182192.38	
317999	5189336Y01	IC	EA	4062	11876	1.0216	12132.52	
345551	525-09768-02	BAG ASSEMBLY	EA	4062	1015	0.2334	236.9	
395663	525-09776-05	HOUSING, LOWER INK BAG	EA	4062	3486	2.2001	7669.55	
397052	525-09777-03	HOUSING, LOWER INK BAG	EA	4062	3486	2.2001	7669.55	
345789	525-09784-04	Housing, Lower-16 channel	EA	4062	623	8.5728	5340.85	
345797	525-10647-06	Cap, Die 16 Nozzle Die	EA	4062	652	3.4065	2221.04	
345800	525-11329-02	Seal Bag Fitting EPDM	EA	4062	1276	0.5393	688.15	
345818	525-11362-01	Fill Cap	EA	4062	895	3.5485	3175.91	
345826	525-11501-01	Seal, Cartridge Vacuum	EA	4062	614	1.8452	1132.95	
391312	525-11677-01	SEAL BAG FITTING PFR	EA	4062	2298	93.0596	213850.96	
456809	525-11678-02	FITTING FLUID BAG, A130	EA	4062	1289	4.9484	6378.49	
367777	54132-3097	Purchased Component	EA	4062	1500	0		
367734	54132-3662	Purchased Component	EA	4062	1500	4.6758	7013.7	
281084	55909-0474	40 Pin Connector, Lead Free	EA	4062	899	2.9586	2659.78	
284306	55909-0574	Connector 50 Pin	EA	4062	201	1.5812	317.82	
283629	55909-0674	Connector	EA	4062	15880	3.687	58549.56	
221057	55909-0704	Connector	EA	4062	2434	5.2162	12696.23	
361842	5971566D01	AAC Vib Motor	EA	4062	63326	0		
456569	62534_05	BARREL, ML-425	EA	4062	8049	0.3797	3056.21	
456577	62535_05	MOUNT, M6.5X.35, 8.1X8.1X3.7	EA	4062	8184	0.3776	3090.28	

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506124	63709_01	PCB 0.315″ *0.315″	EA	4062	17947	1.183	21231.3	4
495921	63846_05	MOUNT 2, TINY PLCC	EA	4062	75000	0.5029	37717.5	
402747	6475243B01-T4	EMU backer 3D Stiffener	EA	4062	52277	0.2586	13518.83	
345834	700-09788-01	DIE, G3.5 16 Channel	EA	4062	667	42.5815	28401.86	
417367	700-11962-01	Die	EA	4062	390	44.3141	17282.5	
497475	705S0130	SW SLIDE 2 POS 1.5MM TRVL 1.	EA	4062	23884	1.6678	39833.74	
371311	740S0022	Fuse, 32V,V/FA, 0402, 1A	EA	4062	20000	3.2593	65186	
444904	7503526S01	FILM ADHESIVE 9492MP	EA	4062	2820	0.0981	276.64	
443012	7503539S01	Foam	EA	4062	25525	0.0788	2011.37	
413913	7503623B31	Poron Pad	EA	4062	29060	0.0232	674.19	
448235	7671093L02	FLTR	EA	4062	36044	0.0359	1293.98	
347098	7.69E+07	Ferrite Bead	EA	4062	122063	0.0453	5529.45	
382969	805-7448	Shield	EA	4062	6597	0.8779	5791.51	
382951	805-7449	Shield	EA	4062	7956	0.8779	6984.57	
371910	8-5353164-6	Connector, 80 Pin	EA	4062	10079	19.9423	200998.44	
373042	870-1346	Dome	EA	4062	183169	0.7185	131606.93	
436550	870-1493	Dome	EA	4062	624004	1.0777	672489.11	
475170	870-1561	DOME 6MM 400G 0.23TRVL	EA	4062	25206	0.5748	14488.41	
478240	870-1562	DOME4MM*0.17MM 400G	EA	4062	59250	1.2349	73167.83	
491006	870-1603	SPRING FINGER 2.08 X 0.8 X 1	EA	4062	265504	0.6955	184658.03	
508138	870-1621	DOME 4MM*0.17MM 200G	EA	4062	51250	2.0226	103658.25	
377975	9164824H04	FLTR EMI 6.3V-DC, 50MA, 4PF	EA	4062	170930	0.4182	71482.93	
377983	9171527C04	FLTR EMI/RFI, 0603/M1608, QUAD	EA	4062	58308	0.4182	24384.41	
448227	9175636B01	FLTR	EA	4062	87554	0.6204	54318.5	
437721	9188975Y03	Filter	EA	4062	70451	0.3363	23692.67	
378100	A3212EELLT-T	IC	EA	4062	548	1.0128	555.01	
426765	AF216M245001	Antenna,Helical,2.4GHZ	EA	4062	3575	1.0898	3896.04	
493757	ANA-00019-001	IC Ana LDO fast RF 2.8V	EA	4062	33000	1.0646	35131.8	
394450	ANA-00221-001	IC	EA	4062	1044500	0.9936	1037815.2	
353244	ANA-00221-001 (G-RAY)(CF)	IC Magneto-Electric SW 5 Pin	EA	4062	45182	0		
440794	ANA-00251-001	IC	EA	4062	317998	0.9445	300349.11	
353252	ANA-00251-001 (G-RAY)(CF)	IC ANA Hall-Effect Switch	EA	4062	12000	0		
393481	ANA-00352-001 (CF)	Cap, 6.8pF, 50V, 0402	EA	4062	30000	0		
494506	ANA-00476-001	Class D mono audio amplifier	EA	4062	36000	3.102	111672	
498718	ANA-00629-001	IC Ana LDO 200mA Ultra	EA	4062	12000	2.2449	26938.8	
427151	APT1608-WMX58	LED	EA	4062	75040	0.1846	13852.38	
380509	ASY-12120-001	Rec 1.5*0.6 cm 23+/-2.5dBPa	EA	4062	94349	3.8749	365592.94	
467313	ASY-13747-001_1	Frame Front	EA	4062	5784	16.968	98142.91	
474661	ASY-14132-001_1	Frame Front	EA	4062	42315	17.1213	724487.81	
367523	AXK8L2012MT1	Connector	EA	4062	4876	0.9107	4440.57	
308911	AXT480124MT1	80 Pin PCB Connector	EA	4062	2587	2.9777	7703.31	
502385	AYG-526K	SPRING contact	EA	4062	71	0.7041	49.99	
499403	BLM15HB121SN1D	Inductor 0402 1200HM±25%300	EA	4062	10000	0.1076	1076	
441121	BLM18BD252SN1D	Ferrite Chip, 2500 Ohm, 50MA	EA	4062	7739	0.032	247.65	
394388	CAP-00330-003	Cap, 0402, 33pF, COG, 50V +/-5%	EA	4062	176618	0.0078	1377.62	
438977	CAP-00680-002	Capacitor	EA	4062	296269	0.0079	2340.53	
492674	CAP-01000-006	Cap Ceramic 100pF 5% 50V	EA	4062	50000	0.0079	395	
394370	CAP-01003-010	Capacitor	EA	4062	2656075	0.0093	24701.5	
353295	CAP-01003-010 (G-RAY)(CF)	Cer Cap 0.1uF 10% 10V X5R 04	EA	4062	28786	0		
424559	CAP-01004-017	Cap, 0402, 1uF, X5R, 6.3 V +/-10%	EA	4062	141021	0.0276	3892.18	
345210	CAP-02R20-005 (CF)	Cap uW Sub Cer 2.2pF +/-0.1p	EA	4062	93031	0		
393422	CAP-02R70-007	Capacitor	EA	4062	159119	0.0151	2402.7	
394396	CAP-03302-003	Capacitor	EA	4062	393182	0.0151	5937.05	
368809	CAP-03R90-007 (CF)	Cap uW Sub Cer 3.9pF +/-0.1p	EA	4062	90604	0		
394409	CAP-06R80-007	Capacitor	EA	4062	159924	0.0151	2414.85	
385246	CAP-06R80-007 (CF)	Capacitor	EA	4062	345	0		
494039	CAP-10060-001	CAP tantalum	EA	4062	17500	0.6251	10939.25	
493386	CC7V-T1A-0.5	Crystal 32.738KHz 12.50pF	EA	4062	42715	3.6928	157737.95	
224207	CL-470S-2WD-D-T	LED	EA	4062	5437	6.5202	35450.33	
439419	CON-00083-001	Connector	EA	4062	215084	1.7243	370869.34	
353164	CON-00083-001 (G-RAY)(CF)	Conn, Low Profile 2X20 Male	EA	4062	1225	0		
444875	CON-00092-001	CONNECTOR	EA	4062	141834	0.9699	137564.8	
359195	CON-00092-001 (CF)	Ultra Miniature SMT Coax Con	EA	4062	4364	0		
430300	CON-00149-001	Connector	EA	4062	86179	1.0535	90789.58	
493765	CON-00168-001	1.8mm spring contact meteor	EA	4062	61200	0.3633	22233.96	
493749	CON-00185-001	2.5mm spring contact meteor	EA	4062	12000	0.3633	4359.6	
494021	CON-00211-001	CONNECTOR, 60 pin, header	EA	4062	17660	2.7804	49101.86	
492746	CON-00235-001	Socket for 3MP SMIA85	EA	4062	1800	2.0117	3621.06	
394610	CPB7324-0250F	24 Pin BD-to-BD Connector Re	EA	4062	54	0.8981	48.5	
394855	CPB7380-0250F	Connector, 80 Pin Receptacle	EA	4062	54	2.5527	137.85	
405446	CRCW0402100KJNED	Res, 100K Ohm, 5%, 0402	EA	4062	232205	0.0148	3436.63	
405438	CRCW040210K0JNED	Res, 10K Ohm, 5%, 0402	EA	4062	33158	0.0071	235.42	
464008	CRCW04021K00JNED	Res, 0402, 1K	EA	4062	53890	0.0148	797.57	
356576	CRCW080564R9FKEA	Resistor	EA	4062	30000	0.0231	693	
252224	DF23B(1.8)-10DS-0.5V(61)	Socket	EA	4062	11971	1.7931	21465.2	
118914	DF30FC-30DP-0.4V(51)	CONNECTOR	EA	4062	31670	1.1392	36078.46	
395647	DF30RB-40DP-0.4V(81)	connector	EA	4062	28000	1.9969	55913.2	
410659	DIO-00032-001	Diode	EA	4062	1429938	0.1561	223213.32	
493870	DIO-00039-001	Schottky barrier triple diod	EA	4062	16000	0.3545	5672	
119327	DS-570/XCN	13MM PIN TYPE RECEIVER	EA	4062	62499	3.0604	191271.94	
221081	DTC144EMT2L	Lead Free Tranistor	EA	4062	6550	0.1331	871.81	
319118	500027-7041	Connector, 70 Pin Plug	EA	4062	51	2.1985	112.12	
448622	EVK105CH010BW	1pF	EA	4062	725	0.0709	51.4	
446117	EVK105CH0R5BW	0.5pF+/-0.1pF	EA	4062	10000	0.0743	743	
452015	EVK105CH1R1BW	Capacitor 1.1pF	EA	4062	10836	0.0743	805.11	
446109	EVK105CH1R5BW	1.5pF	EA	4062	10000	0.0743	743	
280815	EVPAA603W	Razor Side Swich	EA	4062	182601	0.7482	136622.07	
367726	FH23-23S-0.3SHW(05)	Purchased Component	EA	4062	9820	0		
369748	FH23-27S-0.3SHW(05)	Connector 27 Pin	EA	4062	10000	2.9339	29339	
377271	FH23-33S-0.3SHW(05)	Conn FPC 33POS .3MM Tin SMD	EA	4062	10000	3.4228	34228	
362212	FH26-39S-0.3SHW	Connector	EA	4062	4945	3.1571	15611.86	
493802	FIL-00109-001	Fil Ferrite EMI Supp 0402	EA	4062	30000	0.1146	3438	
345973	GM5BW05341A	Led	EA	4062	1104	8.9653	9897.69	
343986	GNM1M2R61A105ME17D	CAPACITOR	EA	4062	1795	0.106	190.27	
358053	GRM0332C1E390JD01D	Capacitor, 39pF, 0201, 6V, 5	EA	4062	134279	0.0145	1947.05	
389423	GRM0335C1E220JD01D	Capacitor	EA	4062	6000	0.0151	90.6	
297502	GRM033R60J104KE19D	Capacitor, 0201, 0.1uF, 6.3V	EA	4062	215710	0.0159	3429.79	
385385	GRM033R60J224ME15D	Cap, 220nF, 20%, 6.3V, 0201	EA	4062	108	0.1006	10.86	
379401	GRM033R61A103KA01D	CAP, CER, .01UF, 10, 10V, X5R	EA	4062	61438	0.0115	706.54	
297810	GRM1555C1H180JZ01D	Cap, 0402, 18pF, 50V, 5%	EA	4062	10000	0.0106	106	

236187	GRM155B11A104KA01D	Capacitor	EA	4062	9215	0.013	119.8	5
320160	GRM155R60G225ME15D	Cap 0402 2.2 uF	EA	4062	20000	0.1214	2428	
121540	GRM188B11A105KA61D	CAP 1.0UF/10V 1608	EA	4062	655	0.0506	33.14	
341198	GRM188B11H222KA01D	CAPACITOR	EA	4062	3270	0.013	42.51	
341171	GRM188B30J225KE18D	CAPACITOR	EA	4062	1810	0.1288	233.13	
121558	GRM188B30J475KE18D	CAPACITOR 4.7UF/6.3V 1608(T=	EA	4062	350	0.1777	62.2	
341163	GRM188B31A225KE33D	CAPACITOR	EA	4062	3990	0.1288	513.91	
341155	GRM188B31C105KA92D	CAPACITOR	EA	4062	2715	0.0603	163.71	
341147	GRM188B31H104KA92D	CAPACITOR	EA	4062	1435	0.0326	46.78	
274044	GRM188R60G106ME47D	Cap, 10uF 4V X5R 0603	EA	4062	17656	0.0905	1597.87	
356218	GRM188R60J106ME47D	Cap, 0603, 10uF, 20%, 6.3V	EA	4062	8000	0.2807	2245.6	
341139	GRM188R61A105KA61E	CAPACITOR	EA	4062	20200	0.0733	1480.66	
268533	GRM188R61E105KA12D	Cap, Cer, 1uF, 10, 25V, X5R	EA	4062	2250	0.0481	108.23	
330211	GRM188R71H104KA93D	Cap, 0603, .1uF, 50V, 10%	EA	4062	3895	0.0271	105.55	
121646	GRM216B31E105KA75D	CAP 1.0UF/25V 2125(T=0.7)	EA	4062	2435	0.128	311.68	
341104	GRM219B31A475KE33D	CAPACITOR	EA	4062	5	0.1883	0.94	
122673	GRP155A104KA01E	CER CHIP CAP 100NF 0402	EA	4062	664607	0.0237	15751.19	
355910	HDR2150-010043	Speaker	EA	4062	1711	3.8376	6566.13	
345244	HDW-10275-001(CF)	Spring clip electron SMT	EA	4062	25573		0	
478215	HDW-10275-001_2	Spring Clip	EA	4062	170264	0.1876	31941.53	
468957	HDW-12188-001_1	Can	EA	4062	228253	0.1566	35744.42	
461712	HDW-12189-001_1	Foam	EA	4062	103774	0.0747	7751.92	
475516	HDW-12670-001_2	Frame Antenna	EA	4062	87891	0.5769	50704.32	
378581	HDW-12703-002 (CF)	Spring	EA	4062	483		0	
461211	HDW-13540-001_1	Dome	EA	4062	452	3.601	1627.65	
461739	HDW-13551-001_1	Foam	EA	4062	157198	0.023	3615.55	
477204	HDW-14524-001_1	Spring	EA	4062	147140	0.3578	52646.69	
489897	HDW-14711-001_1	Dome	EA	4062	117538	1.2214	143560.91	
466572	HDW-14711-001_B	Dome	EA	4062	150	1.3018	195.27	
468113	HDW-14711-001_C	Dome	EA	4062	167	1.2556	209.69	
489336	HDW-15030-001_1	Stiffener	EA	4062	95297	0.8374	79801.71	
461229	HDW-16045-001_1	Dome 0.15mm 1.35N	EA	4062	133371	2.1518	286987.72	
448614	HK10052N2S	2.2nH	EA	4062	6230	0.0333	207.46	
446096	HK10052N4S	2.4nH	EA	4062	10000	0.0345	345	
446125	HK10054N7S	4.7nH+/-0.3nH	EA	4062	7780	0.0345	268.41	
398910	HSMF-C115	Diode,LED,Tri Color,R/B/G	EA	4062	108	2.3723	256.21	
440364	IND-01002-010	Inductor	EA	4062	132759	0.1293	17165.74	
385254	IND-01502-010 (CF)	Inductor	EA	4062	29995		0	
345261	IND-06801-011 (CF)	Ind, 6.8nH, +/- 0.2 nH, 350m	EA	4062	43052		0	
440372	IND-08201-011	Inductor	EA	4062	134750	0.1293	17423.18	
288243	KMR231G	Switch	EA	4062	1831289	0.818	1497994.4	
378290	KUS0023-010100	Microphone	EA	4062	26782	2.4178	64753.52	
430326	LED-00010-001	LED, 0603, White, 3.3V, 20ma	EA	4062	105	0.3197	33.57	
439401	LED-00010-003	LED	EA	4062	777333	0.3233	251311.76	
439398	LED-00016-002	LED	EA	4062	676859	0.3233	218828.51	
255484	LL1005-FH56NJ	Inductor 56NH	EA	4062	7831	0.0733	574.01	
386783	LL1005-FHL15NJ	Inductor	EA	4062	20000	0.0402	804	
322317	LM27964SQ-A-NOPB	IC Backlight Driver	EA	4062	1	4.6106	4.61	
209082	LMK105BJ104KV-F	CAPACITOR	EA	4062	2652	0.0078	20.69	
191951	LMK107BJ105KA-T	Cap 0603 1,0 uF 10V +/-10%	EA	4062	3729	0.022	82.04	
442845	LQH31HNR14J03L	Inductor, 145nH +/-5%	EA	4062	3700	1.0243	3789.91	
463996	LT024D105MAT2C	Cap, X5R, 1.0uF, 4V, 20%, 0402	EA	4062	122375	0.5391	65972.36	
491920	M-105016-INTSWIT-02	Switches	EA	4062	49640	0.7386	36664.1	
223431	MBR140SFT1	Diode	EA	4062	4991	0.4239	2115.68	
343530	MCR01MZPF18R0	RESISTOR	EA	4062	8815	0.0074	65.23	
343513	MCR01MZPF20R0	RESISTOR	EA	4062	8715	0.0074	64.49	
313808	MCR01MZPJ000	Resistor	EA	4062	8540	0.0074	63.2	
313841	MCR01MZPJ102	Resistor	EA	4062	8815	0.0074	65.23	
343521	MCR01MZPJ104	RESISTOR	EA	4062	6505	0.0074	48.14	
343505	MCR01MZPJ512	RESISTOR	EA	4062	9270	0.006	55.62	
373894	MLG1608B33NJT000	Inductor	EA	4062	12000	0.1638	1965.6	
330131	MMZ1005Y601C	Ferrite 0402 600 ohm 250MA	EA	4062	20	0.1011	2.02	
252179	NC7SZ19L6X	Decoder / Demultiplexer (U40	EA	4062	3261	1.0595	3455.03	
420988	NCP15WM224J03RC	Therm NTC 220, kOhm 5 mW K04	EA	4062	30		0	
220839	NCP5007SNT1G	IC	EA	4062	2595	2.8518	7400.42	
417332	P4529C	spring	EA	4062	2		0	
491954	PCF8564ACX9	Real, Time Clock/Calendar	EA	4062	51272	2.585	132538.12	
380955	PR3808-29NC	Stiffener	EA	4062	39820	0.1351	5379.68	
380939	PR3808-30NC	Stiffener	EA	4062	53116	0.1337	7101.61	
380947	PR3808-31NC	Stiffener	EA	4062	39920	0.1178	4702.58	
444381	PRC0464-26/NC	CPSA	EA	4062	4064	0.0821	333.65	
444390	PRC0464-27/NC	CPSA	EA	4062	3272	0.1998	653.75	
347004	PRC5054-27/NC	Stiffener	EA	4062	14452	0.2099	3033.47	
346992	PRC5054-28/NC	Stiffener	EA	4062	14881	0.2489	3703.88	
353480	PRC5077-21NC	Stiffener	EA	4062	20995	0.229	4807.86	
353498	PRC5077-22NC	Stiffener	EA	4062	55974	0.1731	9689.1	
353471	PRC5077-23NC	Stiffener	EA	4062	56087	0.1774	9949.83	
354159	PRC5077-27NC	3M 9705	EA	4062	51166	0.2683	13727.84	
354175	PRC5077-29NC	3M 9460PC	EA	4062	117432	0.0565	6634.91	
354183	PRC5077-44NC	3M 9460PC	EA	4062	106141	0.0539	5721	
364040	PRC5100-16NC	3M 9460PC	EA	4062	99686	0.0543	5412.95	
364058	PRC5100-17NC	3M 9460PC	EA	4062	109634	0.1552	17015.2	
364031	PRC5100-18NC	3M 9460PC	EA	4062	140610	0.0543	7635.12	
364066	PRC5100-19NC	3M 9460PC	EA	4062	102115	0.1976	20177.92	
363346	PRC5100-24NC	Stiffener	EA	4062	54628	0.2121	11586.6	
449060	PRC5147-19A	PSA	EA	4062	44659	0.0468	2090.04	
384770	PRC5147-19NC	PSA NITTO DENKO 5605	EA	4062	22333	0.0597	1333.28	
449078	PRC5147-20A	PSA	EA	4062	45802	0.0475	2175.6	
384788	PRC5147-20NC	PSA NITTO DENKO 5605	EA	4062	9253	0.0546	505.21	
449140	PRC5147-21A	PSA	EA	4062	65037	0.1022	6646.78	
384796	PRC5147-21NC	PSA NITTO DENKO 5605	EA	4062	9139	0.1284	1173.45	
449158	PRC5147-22A	PSA	EA	4062	38734	0.0433	1677.18	
400581	PRC5157-22B	Stiffener	EA	4062	20070	0.2135	4284.95	
385211	PRC5159-14/NC	Stiffener	EA	4062	20000	0.2679	5358	
417711	PRC5159-14A	Stiffener	EA	4062	1836	0.2474	454.23	
400291	PRC5159-15A	Stiffener	EA	4062	20000	0.2123	4246	
417703	PRC5159-15B	Stiffener	EA	4062	1836	0.2193	402.63	
395348	PRC5170-27A	Stiffener	EA	4062	400	0.2308	92.32	
395330	PRC5170-28A	Stiffener	EA	4062	401	0.259	103.86	
396148	PRC5172-23/NC	TESA 4972+LINER	EA	4062	5653	0.3721	2103.48	

396156	PRC5172-24/NC	3M 9713 PSA	EA	4062	2940	0.2042	600.35	6
396164	PRC5172-25/NC	3M 9713 PSA	EA	4062	2714	0.1355	367.75	
396172	PRC5172-26/NC	3M 9713 PSA	EA	4062	2448	0.1951	477.6	
396181	PRC5172-27/NC	3M 9713 PSA	EA	4062	3259	0.2487	810.51	
396201	PRC5172-28/NC	3M 9713 PSA	EA	4062	4855	0.2629	1276.38	
396199	PRC5172-29/NC	3M 9713 PSA	EA	4062	6165	0.1759	1084.42	
397386	PRC5180-40NC	Cushion	EA	4062	21611	0.0396	855.8	
435119	PRC5182-42/A	3M 467 PSA	EA	4062	106958	0.0546	5839.91	
399218	PRC5182-42NC	3M 9705 PSA	EA	4062	344800	0.1314	45306.72	
398258	PRC5184-40NC	Stiffener	EA	4062	41550	0.1947	8089.79	
399381	PRC5192-29NC	Stiffener	EA	4062	39920	0.1767	7053.86	
440381	PRC5210-60B	Stiffener	EA	4062	63855	0		
404291	PRC5210-60NC	Backer Antenna Switch(stiffe	EA	4062	4680	0.4394	2056.39	
417720	PRC5230-37NC	Stiffener	EA	4062	686	0.1998	137.06	
417691	PRC5230-38NC	Stiffener	EA	4062	686	0.1963	134.66	
417682	PRC5230-39NC	Stiffener	EA	4062	686	0.1963	134.66	
417674	PRC5230-40NC	Stiffener	EA	4062	926	0.3442	318.73	
424997	PRC5230-41/NC	3M 9460	EA	4062	31512	0.1743	5492.54	
425009	PRC5230-42/NC	3M 9460	EA	4062	30514	0.0498	1519.6	
424989	PRC5230-43/NC	3M 9460	EA	4062	29886	0.0431	1288.09	
424971	PRC5230-44/NC	3M 9460	EA	4062	30715	0.1976	6069.28	
456972	PRC5276-16/NC	PSA 3M 9077	EA	4062	4196	0.1367	573.59	
456981	PRC5276-17/NC	PSA 3M 9077	EA	4062	5131	0.0468	240.13	
476332	PRC5308-26/NC	Stiffener R1500B-100B	EA	4062	31000	0.2101	6513.1	
418159	PT3478-22NC	Stiffener	EA	4062	3037	0.3549	1077.83	
418141	PT3479-22NC	Stiffener	EA	4062	3629	0.3473	1260.35	
312872	PTC0294-41/NC	Stiffener Stainless Steel	EA	4062	17761	0.1407	2498.97	
469440	PTC0489-32/NC	Stiffener AAP25KA	EA	4062	22720	0.176	3998.72	
312979	PTC5011-58/NC	STIFFENER STAINLESS STEEL	EA	4062	13952	0.1532	2137.45	
345711	PTC5017-9	3M 9460 stiffener	EA	4062	2581	0.2848	735.07	
366951	PTC5021-44/A	Stiffener	EA	4062	15652	0.2271	3554.57	
369730	PTC5021-45NC	AR8001	EA	4062	158850	0.2003	31817.66	
377300	PTC5034-67NC	3M7303	EA	4062	20058	0.4203	8430.38	
377289	PTC5034-68NC	3M7303	EA	4062	20058	0.4433	8891.71	
377297	PTC5034-69NC	3M7303	EA	4062	19353	0.403	7799.26	
394417	PTC5036-20/A	stiffener	EA	4062	320	0.3219	103.01	
380120	PTC5036-20/NC	stiffener	EA	4062	696	0.2897	201.63	
448016	PTC5036-20C	Stiffener	EA	4062	476	0.3443	163.89	
424241	PTC5040-25/A	3M 9077 PSA	EA	4062	6995	0.0819	572.89	
400590	PTC5040-25/NC	3M 9460 PSA	EA	4062	44450	0.0607	2698.12	
400071	PTC5040-51/NC	KAPTON TAPE	EA	4062	3636	0.0242	87.99	
465369	PTC5046-51/B	PSA 3M 9460	EA	4062	90156	0.1576	14208.59	
404822	PTC5047-63/NC	3M 9077 PSA	EA	4062	96000	0.0111	1065.6	
421649	PTC5047-64/A	3M 9077 PSA	EA	4062	6149	0.0551	338.81	
457941	PTC5047-64/B	PSA, 3M 9077	EA	4062	157666	0.029	4572.31	
421631	PTC5047-65/A	3M 9077 PSA	EA	4062	16625	0.0551	916.04	
457959	PTC5047-65/B	PSA, 3M 9077	EA	4062	300766	0.0312	9383.9	
404793	PTC5047-66/NC	3M 9077 PSA	EA	4062	237923	0.0857	20390	
404785	PTC5047-67/NC	3M 9077 PSA	EA	4062	290056	0.0218	6323.22	
457932	PTC5047-68/B	PSA, 3M 9077	EA	4062	149203	0.0494	7370.63	
423804	PTC5047-71/NC	Teflon	EA	4062	152587	0.0262	3997.78	
429704	PTC5047-72/NC	Teflon Tape	EA	4062	164468	0.0443	7285.93	
402712	PTC5050-34NC	stiffener	EA	4062	141161	0.247	34866.77	
402691	PTC5050-35NC	stiffener	EA	4062	182267	0.1937	35305.12	
402683	PTC5050-36NC	stiffener	EA	4062	181394	0.1937	35136.02	
402675	PTC5050-37NC	stiffener	EA	4062	141303	0.1991	28133.43	
402667	PTC5050-38NC	Stiffener	EA	4062	183670	0.2456	45109.35	
402659	PTC5050-39NC	Stiffener	EA	4062	138071	0.3633	50161.19	
409501	PTC5050-45A	3M 9713 PSA	EA	4062	76104	0.5638	42907.44	
405139	PTC5050-46/NC	TEFLON	EA	4062	84546	0.0123	1039.92	
415951	PTC5050-64/NC	Nitto denko 903ul teflon	EA	4062	89989	0.01	899.89	
431484	PTC5050-67/NC	TEFLON TAPE	EA	4062	128483	0.0115	1477.55	
462011	PTC5050-80/A	PSA 3M 9077	EA	4062	33231	0.0342	1136.5	
462029	PTC5050-81/A	PSA 3M 9077	EA	4062	77915	0.0352	2742.61	
462002	PTC5050-84/NC	PSA 3M 9077	EA	4062	75867	0.0196	1486.99	
437624	PTC5052-46/A	3M 9705 PSA (6Up/Strips)	EA	4062	69086	0.7389	51047.65	
411002	PTC5052-46/NC	3M 9705 PSA	EA	4062	93690	0.7193	67391.22	
410683	PTC5054-11/NC	3M 467 PSA	EA	4062	26072	0.91	23725.52	
430465	PTC5055-9/A	PSA	EA	4062	72	0.657	47.3	
410675	PTC5055-9/NC	3M 467 PSA	EA	4062	38344	0.3033	11629.74	
411951	PTC5057-36NC	Stiffener	EA	4062	18200	0.2027	3689.14	
411969	PTC5057-37NC	Stiffener	EA	4062	18200	0.2071	3769.22	
416284	PTC5062-25NC	stiffener	EA	4062	2309	0.3124	721.33	
416292	PTC5062-26NC	stiffener	EA	4062	2309	0.329	759.66	
478821	PTC5069-45/NC	PSA 3M 9077	EA	4062	222000	0.0242	5372.4	
433201	PTC5072-12/A	3M 9671LE PSA	EA	4062	156	1.5586	243.14	
448243	PTC5075-43A	Stiffener	EA	4062	50	0.1487	7.44	
426440	PTC5075-48/NC	TESA 4983 PSA	EA	4062	2589	0.0399	103.3	
467006	PTC5081-27/A	Stiffene CBF-300	EA	4062	1300	0.2672	347.36	
467014	PTC5081-28/A	Stiffene CBF-300	EA	4062	1300	0.2961	384.93	
439380	PTC5083-12/NC	3M 9671LE PSA	EA	4062	34	1.8117	61.6	
452306	PTC5089-59/NC	PSA 3M 9705 (6Up/Strips)	EA	4062	22708	3.8869	88263.73	
463831	PTC5093-33/A	Stiffener3M9460, 0.2mm THK S	EA	4062	20345	0.4265	8677.14	
452285	PTC5096-16/NC	PSA 3M 9460	EA	4062	247537	0.023	5693.35	
452293	PTC5096-17/NC	PSA 3M 9705	EA	4062	225732	0.1427	32211.96	
488261	PTC5099-42/A	PSA 3M 9460	EA	4062	35000	0.1402	4907	
461974	PTC5099-42/NC	PSA 3M 9460	EA	4062	277	0.1026	28.42	
488341	PTC5100-22/B	PSA 3M 9077	EA	4062	66103	0.039	2578.02	
455582	PTC5100-30/NC	Stiffener0.2mmTHK SUS AU25KA	EA	4062	58800	0.1916	11266.08	
455574	PTC5100-31/NC	Stiffener0.2mmTHK SUS AU25KA	EA	4062	58800	0.1774	10431.12	
488333	PTC5100-67/B	PSA 3M 9077	EA	4062	69000	0.0625	4312.5	
499315	PTC5100-68/C	PSA 3M 9077 (die cut)	EA	4062	68147	0.071	4838.44	
499323	PTC5100-69/C	PSA 3M 9077 (die cut)	EA	4062	67641	0.071	4802.51	
488296	PTC5100-70/B	PSA 3M 9077	EA	4062	67917	0.0922	6261.95	
488350	PTC5100-71/B	PSA 3M 9077	EA	4062	62206	0.3903	24279	
502705	PTC5100-72/NC	PSA Tesa 4980 (die cut)	EA	4062	37385	0.0811	3031.92	
488270	PTC5101-47/B	PSA 3M 9077	EA	4062	33119	0.2484	8226.76	
507944	PTC5101-48/C	PSA 3M 9077 die cut	EA	4062	188523	0.0716	13498.25	
507864	PTC5102-31/C	Stiffener CBF-300 SUS THK 0.	EA	4062	131856	0.3248	42826.83	
507881	PTC5102-32/C	Stiffener CBF-300 SUS THK 0.	EA	4062	125896	0.5137	64672.78	

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494012	PTC5102-33/C	Stiffener CBF-300	EA	4062	110656	0.2679	29644.74	
507899	PTC5102-34/C	Stiffener CBF-300 SUS THK 0.	EA	4062	127016	0.4117	52292.49	
507901	PTC5102-35/D	Stiffener CBF-300 SUS THK 0.	EA	4062	99136	0.791	78416.58	
494004	PTC5102-36/B	Stiffener CBF-300	EA	4062	110656	0.2679	29644.74	
494178	PTC5102-63/A	PSA 3M 9713	EA	4062	86962	0.7452	64804.08	
494194	PTC5102-64/D	PSA TESA 4965	EA	4062	69937	0.0475	3322.01	
494186	PTC5102-65/A	PSA TESA4965	EA	4062	56648	0.0496	2809.74	
494207	PTC5102-69/C	PSA TESA4965	EA	4062	80594	0.0475	3828.22	
494151	PTC5102-70/A	PSA 3M 9713	EA	4062	84915	0.3549	30136.33	
494160	PTC5102-71/B	PSA TESA 4982+4790-92-09039	EA	4062	83850	0.0383	3211.46	
498486	PTC5104-22/B	Stiffener AU25KA	EA	4062	129760	0.2247	29157.07	
488931	PTC5104-23/B	Stiffener AU25KA	EA	4062	129760	0.181	23486.56	
507952	PTC5104-24/D	Stiffener AU25KA	EA	4062	129760	0.2471	32063.7	
499391	PTC5104-36/B	PSA 3M 9460 (die cut)	EA	4062	124731	0.0669	8344.5	
499382	PTC5104-41/A	PSA 3M 9460 (die cut)	EA	4062	88279	0.0218	1924.48	
507928	PTC5104-44/B	PSA 3M 9713 die cut	EA	4062	250	0.1747	43.68	
512241	PTC5104-44/C	PSA 3M 9713 die cut	EA	4062	83024	0.1263	10485.93	
507936	PTC5104-45/B	PSA 3M 9713 die cut	EA	4062	45365	0.0781	3543.01	
511521	PTC5104-46/NC	PSA Tesa 4982 die cut	EA	4062	84535	0.0213	1800.6	
466257	PTC5109-22/NC	StiffenerCBF-300Niplated0.15	EA	4062	20	0.2524	5.05	
494784	PTC5114-22/NC	Stiffener AAP25KA	EA	4062	2200	0.2507	551.54	
494776	PTC5114-23/NC	Stiffener AAP25KA	EA	4062	2200	0.5531	1216.82	
485503	PTC5119-29/NC	Stiffener FR0100	EA	4062	25720	0.2161	5558.09	
485781	PTC5127-12/A	PSA 3M 9671LE	EA	4062	42344	1.4683	62173.7	
484009	PTC5128-12/NC	PSA 3M 9671LE	EA	4062	335	1.3655	457.44	
490599	PTC5133-22/NC	Stiffener 3M9460	EA	4062	53460	0.1468	7847.93	
490644	PTC5140-37/NC	Stiffener AU25KA	EA	4062	120	0.1901	22.81	
510836	PTC5140-38/C	PSA 3M9099 die cut	EA	4062	8091	0.0605	489.51	
514546	PTC5142-59/A	PSA 3M 9009 die cut	EA	4062	10100	0.0509	514.09	
514554	PTC5142-60/A	PSA 3M9009 die cut	EA	4062	10100	0.0516	521.16	
510668	PTC5144-84/NC	PSA 3M9099 die cut	EA	4062	14016	0.0601	842.36	
510676	PTC5144-85/NC	PSA 3M9099 die cut	EA	4062	44113	0.0505	2227.71	
510684	PTC5144-86/NC	PSA 3M9099 die cut	EA	4062	39132	0.0575	2250.09	
510692	PTC5144-87/NC	PSA 3M9099 die cut	EA	4062	13932	0.0587	817.81	
510705	PTC5144-88/NC	PSA 3M9099 die cut	EA	4062	14033	0.0622	872.85	
510713	PTC5144-89/NC	PSA 3M9099 die cut	EA	4062	14125	0.0608	858.8	
514562	PTC5148-31/NC	PSA 3M9009 die cut	EA	4062	39352	0.0392	1542.6	
514571	PTC5148-32/NC	PSA 3M9009 die cut	EA	4062	111352	0.0425	4732.46	
438580	PRC5210-60A	Backer Antenna Switch	EA	4062	230	0.4081	93.86	
488317	QDSP-PA00	Display	EA	4062	3769	4.7419	17872.22	
237201	QSMR-C175	LED Chip Top Mt Ingan Blue	EA	4062	2000	0.2991	598.2	
284517	QSMW-C137	Chip Top MNT White	EA	4062	633	1.6301	1031.85	
129461	RB520S-30TE61	LEAD FREE DIODE	EA	4062	668	0.122	81.5	
330069	RC0402JR-0710RL	res 0402 10 ohm 5%	EA	4062	3198	0.0056	17.91	
330034	RC0402JR-07330RL	res 0402 33ohm 5%	EA	4062	9860	0.0053	52.26	
330851	RC0402JR-0747KL	Res 0402, 47K ohm 5%	EA	4062	9855	0.0053	52.23	
445157	REG70609/05	Filter 0201 80Ohm 100mA	EA	4062	4845800	0.0507	245682.06	
399154	REG70618/20	Filter	EA	4062	4002359	0.0951	380624.34	
343450	REP621001/0	Res 0201 0OHM	EA	4062	3287283	0.0078	25640.81	
394222	REP621002/22	Res 0201 22, Ohm +/-22.5%	EA	4062	4538007	0.0078	35396.45	
447451	REP621004/1	Res 0201 1kohm +/-5%	EA	4062	2827255	0.0078	22052.59	
492666	RES-01000-003	Res Chip 100 ohm 1% 63mW 040	EA	4062	90000	0.0051	459	
353324	RES-01000-003 (G-RAY) (CF)	Res 100 Ohm 1% 63mW 0402	EA	4062	16711	0		
394468	RES-01001-006	Resistor	EA	4062	420675	0.0051	2145.44	
353308	RES-01001-007 (G-RAY) (CF)	Res 1K Quad Pack 0805	EA	4062	22230	0		
368729	RES-01003-006 (CF)	Res Chip 100 Kohm 1% 63mW 04	EA	4062	13312	0		
418757	RES-01101-002	Resistor	EA	4062	150221	0.0051	766.13	
442061	RES-02000-002	Resistor	EA	4062	93827	0.0051	478.52	
442087	RES-02211-002	Resistor	EA	4062	179660	0.0051	916.27	
442108	RES-02432-001	Resistor	EA	4062	202658	0.0051	1033.56	
442052	RES-02740-002	Resistor	EA	4062	198225	0.0051	1010.95	
385191	RES-039R2-002 (CF)	Resistor	EA	4062	18826	0		
442095	RES-05110-001	Resistor	EA	4062	2571946	0.0051	13116.92	
442079	RES-060R4-001	Resistor	EA	4062	197284	0.0051	1006.15	
382782	RES-060R4-001 (CF)	Res, 60R4 Ohm, 1%	EA	4062	475	0		
398160	RES-078R7-001	Res Chip, 78.7 Ohm, 1%, 63mW, 04	EA	4062	198957	0.0051	1014.68	
498013	RES-10051-001	Res, 0 Ohm Jumper, 0201	EA	4062	20000	0.0167	334	
430334	RES-10052-001	Res, 0201, 1K Ohm +/-1%	EA	4062	848760	0.021	17823.96	
451864	RES-10053-001	Resistor 0201, 150ohm, +/	EA	4062	100000	0.0224	2240	
493925	RES-10100-001	Res TK-Film 11.5 Ohm	EA	4062	30000	0.0214	642	
498726	RES-10169-001	Res 0201 2.21Kohm +/-1%	EA	4062	60000	0.021	1260	
454336	RES-10198-001	Resistor	EA	4062	463995	0.0294	13641.45	
493909	RES-10228-001	Res TK-Film 4.12K Ohm	EA	4062	20000	0.0214	428	
493888	RES-10246-001	Res, 0201, 4.99K Ohm +/-1%	EA	4062	10000	0.0214	214	
454344	RES-10249-001	Resistor, 0201, 4939	EA	4062	464107	0.0184	8539.57	
492703	RES-10308-001	Res TK-Film 100K Ohm5%63mWO4	EA	4062	20000	0.0036	72	
393684	RJC4633012/22	Cap 0201 22pF 25V +/-5%	EA	4062	1785543	0.0089	15891.33	
394231	RJC4633013/1	Cap 0201 100 uF 10V +/-5%	EA	4062	570319	0.0087	4961.78	
331934	RJC5163537/1	Cap 0603 1.0uF X5R 10V +/-10	EA	4062	227527	0.018	4095.49	
385393	RJC5164016/22	Cap 0201 220nf X5R 6.3V +/-2	EA	4062	959350	0.0537	51517.1	
130016	RK73B1ELTP473J	RES. 47K 5% 20X40 0402	EA	4062	99818	0.0057	568.96	
216514	RK73B1ELTP563J	Resistor	EA	4062	317	0.0082	2.6	
406334	RK73B1ETTP160J	Res, 16 Ohm, 5%, 0402	EA	4062	10000	0.004	40	
475268	RK73B1ETTP241J	Res, 240 Ohm, 5%, 0402	EA	4062	378856	0.0148	5607.07	
280946	RK73H1ETTP1000F	Res, 100 Ohm, 1%	EA	4062	60000	0.0078	468	
280962	RK73H1ETTP1003F	Resistor 100K Ohm 1%	EA	4062	20000	0.0078	156	
378222	RK73H1ETTP3920F	Resistor	EA	4062	20000	0.0078	156	
383890	RK73H1ETTP39R2F	Resistor	EA	4062	30000	0.0082	246	
312792	RK73Z2HTTE	0 Ohm Jumper / Lead Free	EA	4062	12000	0.0615	738	
394249	RKZ223925/1	DIODE ZENER 5.6V 0.9X0.6X0.3	EA	4062	3086568	0.1549	478109.38	
444883	RKZ433921/2	LED 2.5x1.0x1.0 RGB	EA	4062	1770355	1.2774	2261451.48	
393705	RKZ433989/1	LED 0.0 V 1.8X1.1X0.30 Yello	EA	4062	9998644	0.3129	3128575.71	
500937	RLC509440R1A	Microphone X 4 pin	EA	4062	76800	3.0785	236428.8	
393713	RLE90736	Speaker37.2*23.9*3.65mm 75dB	EA	4062	227349	3.8653	878772.09	
393721	RMD80109	Switch, Tact, 3.9X2.9X2mm Hg	EA	4062	1659831	0.4641	770327.57	
394257	RNK79901	Conn Socket	EA	4062	773848	0.4365	337784.65	
473887	RNK87147/2R1C	Conn 11PIN M2 Memory Holder	EA	4062	165962	2.1765	361216.29	
470416	RNK87147R1A	Conn 11pin	EA	4062	465410	2.1385	995279.29	
393668	RNT79925	Conn atenna	EA	4062	454626	1.0184	462991.12	
404339	RNV799011R1A	Conn	EA	4062	445174	1.8452	821435.06	

393633	RNV799041	Conn 24pin Recept	EA	4062	1580343	0.8871	1401922.28	8
388033	RNV799041 (CF)	Connector, 24 Pin, Recep, BT	EA	4062	1	0		
393799	RNV799044	Connector, 80 Pin Receptacle	EA	4062	2109	2.3974	5056.12	
410755	RNV79985R1A	Conn 100 Pin B2B	EA	4062	465885	3.1079	1447923.99	
476789	RPV79982/24R1A	Conn 24pin Plug B2B	EA	4062	544419	1.1	598860.9	
393650	RPV79984	Conn 80 Pin, Plug, B2B, 0.8M	EA	4062	58603	2.7683	162230.68	
470635	RYT113955/1	IC Vreg CS-4	EA	4062	166340	0.6179	102781.49	
341411	SDRP0615FJ02	Speaker	EA	4062	91015	3.185	289882.78	
356031	SDRP0615KJ02	Speaker	EA	4062	117824	2.6374	310749.02	
491938	SF-2529-14BA-002	Battery, 14MAH, Solicore	EA	4062	45827	7.3857	338464.47	
313120	SKRKAEE010	Switch	EA	4062	6730	0.4641	3123.39	
409391	SSAD120100	Switch,Slide,SW4,1.4MM	EA	4062	23701	0.9625	22812.21	
440567	SSSS811101	Switch, SMD Slide, 1.5mm	EA	4062	3294	1.3484	4441.63	
440330	SWT-00008-001	Switch	EA	4062	618	0.6183	382.11	
353236	SWT-00008-001 (G-RAY)(CF)	Switch 2.4N Light Touch	EA	4062	206	0		
494987	SWT-00025-002	Switch	EA	4062	133364	1.8453	246096.59	
393801	SXA1097277	Navigation Domefoil	EA	4062	284896	1.48	421646.08	
394599	SXA1097320	Main Keypad Dome Foil Assemb	EA	4062	590658	1.6668	984508.75	
393676	SXA1097326	Antenna Substrate	EA	4062	261226	0.431	112588.41	
412582	SXA1097832	Al Foil	EA	4062	30286	0.3691	11178.56	
427362	SXA1097835	Keypad Metal Foil	EA	4062	209336	0.3122	65354.7	
406799	SXA1097835 (CF)	Al Foil	EA	4062	78	0		
450301	SXA1098151	PSA	EA	4062	16043	0.1163	1865.8	
343610	V33834BB	Dome array with EL panel	EA	4062	2422	17.6046	42638.34	
343572	VDZT2R-33B	DIODE	EA	4062	6515	0.1858	1210.49	
341067	VLF3010AT-220MR33	Inductor	EA	4062	27	2.0376	55.02	
362491	VMT-04C	AAC vib Motor	EA	4062	635	3.9736	2523.24	
438598	X812921-001	HP Jack	EA	4062	2958	1.1495	3400.22	
440348	XDR-00010-001	Microphone	EA	4062	883	2.062	1820.75	
440356	XDR-00011-001	Microphone	EA	4062	57121	4.124	235567	

MFC2 Bonded Transfer   46257477.2

Report total   46257477.2

Appendix E

Material Demand

Component Lead time : 1wks

Component	Yeild	wk19 5-May	wk20 12-May	wk21 19-May	wk22 26-May	wk23 2-Jun	wk24 9-Jun	wk25 16-Jun	wk26 23-Jun	wk27 30-Jun	wk28 7-Jul	wk29 14-Jul	wk30 21-Jul	wk31 28-Jul	wk32 4-Aug	wk33 11-Aug	wk34 18-Aug
1 HDW-16045-001																	
Yeild	0.94																
POP-13432-002_A		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
11951-005_B																	
ASY-12669-001																	
ASY-13842-001_B																	
Total Demand		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
2 HDW-13551-001																	
Yeild	0.94																
POP-13432-002_A		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
11951-005_B																	
ASY-12669-001																	
ASY-13842-001_B																	
POP-12589-003_B		116,909	106,281	95,663	90,339	85,025	85,025	138,166	138,166	119,035	106,281	95,663	85,025	85,025	96,716	5,314	
Total Demand		138,166	127,537	116,909	111,595	100,967	100,967	156,233	154,108	129,663	116,909	127,537	116,909	100,967	96,716	5,314	
3 HDW-12189-001																	
Yeild	0.97																
POP-13432-002_A																	
ASY-16066-001_1		20,619	20,619	20,619	20,619	20,619	20,619	15,464	17,526	15,464	10,309	10,309	20,619	20,619	15,464	11,340	
ASY-16316-001_1		77,320	113,402	103,093	92,784	87,629	82,474	82,474	134,021	134,021	115,464	103,093	103,093	92,784	82,474	82,474	5,155
ASY-13842-001_B/13066																	
POP-12589-003_B																	
Total Demand		97,938	134,021	123,711	113,402	108,247	103,093	97,938	151,546	149,485	125,773	113,402	123,711	113,402	97,938	93,814	5,155
4 ANA-00221-001																	
Yeild	0.94																
POP-13432-002_A		85,025	85,025	85,025	85,025	85,025	63,769	72,271	63,769	42,512	42,512	85,025	85,025	63,769	46,764		
11951-005_B																	
ASY-12669-001																	
Total Demand		85,025	85,025	85,025	85,025	85,025	63,769	72,271	63,769	42,512	42,512	85,025	85,025	63,769	46,764		
5 ANA-00251-001																	
Yeild	0.94																
POP-13432-002_A		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
11951-005_B																	
ASY-12669-001																	
ASY-13842-001_B																	
POP-12589-003_B		467,637	425,125	382,612	361,356	340,100	340,100	552,662	552,662	476,140	425,125	382,612	340,100	340,100	386,864	21,256	
Total Demand		552,662	510,150	467,637	446,381	425,125	403,869	624,934	616,431	518,652	467,637	510,150	467,637	403,869	386,864	21,256	
6 CAP-01003-010																	
Yeild	0.94																
POP-13432-002_A		297,587	297,587	297,587	297,587	297,587	223,191	252,949	223,191	148,794	148,794	297,587	297,587	223,191	163,673		
11951-005_B																	
ASY-12669-001																	
POP-13432-002_A																	
11951-005_B																	
ASY-12669-001																	
ASY-13842-001_B																	
POP-12589-003_B		1,753,640	1,594,218	1,434,796	1,355,086	1,275,375	1,275,375	2,072,484	2,072,484	1,785,524	1,594,218	1,434,796	1,275,375	1,275,375	1,275,375	79,711	
Total Demand		2,051,228	1,891,806	1,732,384	1,652,673	1,572,962	1,498,565	2,325,433	2,295,674	1,934,318	1,743,012	1,891,806	1,732,384	1,498,565	1,439,048	79,711	

Material Demand

Component Lead time : 1wks

Component	Row	wk19 5-May	wk20 12-May	wk21 19-May	wk22 26-May	wk23 2-Jun	wk24 9-Jun	wk25 16-Jun	wk26 23-Jun	wk27 30-Jun	wk28 7-Jul	wk29 14-Jul	wk30 21-Jul	wk31 28-Jul	wk32 4-Aug	wk33 11-Aug	wk34 18-Aug
7 CAP-00330-003	Yeild	0.94															
	POP-13432-002_A	21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	10,628	21,256	21,256	15,942	11,691		
	11951-005_B																
	ASY-13842-001_B																
	ASY-12669-001																
	POP-12589-003_B																
	Total Demand																
8 CAP-03302-003	Yeild	0.94															
	POP-13432-002_A	42,512	42,512	42,512	42,512	42,512	31,884	36,136	31,884	21,256	21,256	42,512	42,512	31,884	23,382		
	11951-005_B																
	ASY-13842-001_B																
	ASY-12669-001																
	POP-12589-003_B	138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	127,537	116,909	100,967	96,716	5,314	
	Total Demand	276,331	255,075	233,819	223,191	212,562	201,934	312,467	308,216	259,326	233,819	255,075	233,819	201,934	193,432	10,628	
9 CON-00083-001	Yeild	0.94															
	POP-13432-002_A	21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	10,628	21,256	21,256	15,942	11,691		
	11951-005_B																
	ASY-13842-001_B																
	ASY-12669-001																
	POP-12589-003_B																
	Total Demand																
10 DIO-00032-001	Yeild	0.94															
	POP-13432-002_A	191,306	191,306	191,306	191,306	191,306	143,480	162,610	143,480	95,653	95,653	191,306	191,306	143,480	105,218		
	11951-005_B																
	ASY-13842-001_B																
	ASY-12669-001																
	POP-12589-003_B																
	Total Demand																
11 HDW-12188-001	Yeild	0.94															
	POP-13432-002_A	21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	10,628	21,256	21,256	15,942	11,691		
	11951-005_B																
	ASY-13842-001_B																
	ASY-12669-001																
	POP-12589-003_B	1,169,093	1,062,812	956,531	903,390	850,250	850,250	1,381,656	1,381,656	1,190,350	1,062,812	956,531	850,250	850,250		53,141	
	Total Demand	1,360,400	1,254,118	1,147,837	1,094,697	1,041,556	993,729	1,544,266	1,525,136	1,286,003	1,158,465	1,254,118	1,147,837	993,729	955,468	53,141	
12 LED-00010-003	Yeild	0.94															
	POP-13432-002_A	106,281	106,281	106,281	106,281	106,281	79,711	90,339	79,711	53,141	53,141	106,281	106,281	79,711	58,455		
	11951-005_B																
	ASY-13842-001_B																
	ASY-12669-001																
	POP-12589-003_B	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	95,653	85,025	85,025		5,314	
	Total Demand	690,828	637,687	584,547	557,976	531,406	504,836	781,167	770,539	648,315	584,547	637,687	584,547	504,836	483,580	26,570	
13 LED-00016-002	Yeild	0.94															
	POP-13432-002_A	63,769	63,769	63,769	63,769	63,769	47,827	54,203	47,827	31,884	31,884	63,769	63,769	47,827	35,073		
	11951-005_B																
	ASY-13842-001_B																
	ASY-12669-001																
	POP-12589-003_B	350,728	318,844	286,959	271,017	255,075	255,075	414,497	414,497	357,105	318,844	286,959	255,075	255,075		15,942	
	Total Demand	414,497	382,612	350,728	334,786	318,844	302,901	468,700	462,323	388,989	350,728	382,612	350,728	302,901	290,148	15,942	
14 RES-05110-001	Yeild	0.94															
	POP-13432-002_A	276,331	276,331	276,331	276,331	276,331	207,248	234,881	207,248	138,166	138,166	276,331	276,331	207,248	151,982		
	11951-005_B																
	ASY-13842-001_B																
	ASY-12669-001																
	POP-12589-003_B	1,519,821	1,381,656	1,243,490	1,174,407	1,105,325	1,105,325	1,796,153	1,796,153	1,547,455	1,381,656	1,243,490	1,105,325	1,105,325		69,083	
	Total Demand	1,796,153	1,657,987	1,519,821	1,450,739	1,381,656	1,312,573	2,031,034	2,003,401	1,685,620	1,519,821	1,657,987	1,519,821	1,312,573	1,257,307	69,083	

Material Demand

Component Lead time : 1wks

Item	Component	Yeild	wk19 5-May	wk20 12-May	wk21 19-May	wk22 26-May	wk23 2-Jun	wk24 9-Jun	wk25 16-Jun	wk26 23-Jun	wk27 30-Jun	wk28 7-Jul	wk29 14-Jul	wk30 21-Jul	wk31 28-Jul	wk32 4-Aug	wk33 11-Aug	wk34 18-Aug
15 RES-02432-001		0.94																
	POP-13432-002_A		42,512	42,512	42,512	42,512	42,512	31,884	36,136	31,884	21,256	42,512	42,512	42,512	31,884	23,382		
	11951-005_B																	
	ASY-12669-001																	
	ASY-13842-001_B																	
	POP-12589-003_B		233,819	212,562	191,306	180,678	170,050	170,050	276,331	276,331	238,070	212,562	191,306	170,050	170,050	170,050	10,628	
	Total Demand		276,331	255,075	233,819	223,191	212,562	201,934	312,467	308,216	259,326	233,819	255,075	233,819	201,934	193,432	10,628	
16 RES-02211-002		0.94																
	POP-13432-002_A		42,512	42,512	42,512	42,512	42,512	31,884	36,136	31,884	21,256	42,512	42,512	42,512	31,884	23,382		
	11951-005_B																	
	ASY-12669-001																	
	ASY-13842-001_B																	
	POP-12589-003_B																	
	Total Demand		42,512	42,512	42,512	42,512	42,512	31,884	36,136	31,884	21,256	42,512	42,512	42,512	31,884	23,382		
17 SWT-00008-001		0.94																
	POP-13432-002_A		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
	11951-005_B																	
	Total Demand		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
18 XDR-00010-001		0.94																
	POP-13432-002_A		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
	11951-005_B																	
	ASY-13842-001_B																	
	ASY-12669-001																	
	POP-12589-003_B		116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	95,653	95,653	85,025	85,025	5,314	
	Total Demand		138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	127,537	116,909	100,967	96,716	5,314	
19 CON-00092-001		0.94																
	POP-13432-002_A		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
	11951-005_B																	
	Total Demand		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
20 HDW-14524-001		0.94																
	POP-13432-002_A		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
	11951-005_B																	
	ASY-12669-001																	
	ASY-13842-001_B																	
	POP-13453-001_B		116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	95,653	95,653	85,025	85,025	5,314	
	Total Demand		138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	127,537	116,909	100,967	96,716	5,314	
21 HDW-10275-001		0.94																
	POP-13432-002_A		42,512	42,512	42,512	42,512	42,512	31,884	36,136	31,884	21,256	42,512	42,512	42,512	31,884	23,382		
	11951-005_B																	
	ASY-12669-001																	
	ASY-13842-001_B																	
	POP-13453-001_B		233,819	212,562	191,306	180,678	170,050	170,050	276,331	276,331	238,070	212,562	191,306	170,050	170,050	170,050	10,628	
	Total Demand		276,331	255,075	233,819	223,191	212,562	201,934	312,467	308,216	259,326	233,819	255,075	233,819	201,934	193,432	10,628	
22 CAP-02R70-007		0.94																
	POP-13432-002_A		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
	11951-005_B		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
	ASY-12669-001																	
	ASY-13842-001_B																	
	POP-13453-001_B																	
	Total Demand		42,512	42,512	42,512	42,512	42,512	31,884	36,136	31,884	21,256	42,512	42,512	42,512	31,884	23,382		
23 IND-08201-011		0.94																
	POP-13432-002_A		21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
	ASY-13842-001_B																	
	ASY-12669-001																	
	11951-005_B																	
	POP-13453-001_B		116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	95,653	95,653	85,025	85,025	5,314	
	Total Demand		138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	127,537	116,909	100,967	96,716	5,314	

Material Demand

Component Lead time : 1wks

Component	wk19 5-May	wk20 12-May	wk21 19-May	wk22 26-May	wk23 2-Jun	wk24 9-Jun	wk25 16-Jun	wk26 23-Jun	wk27 30-Jun	wk28 7-Jul	wk29 14-Jul	wk30 21-Jul	wk31 28-Jul	wk32 4-Aug	wk33 11-Aug	wk34 18-Aug
24 IND-01002-010																
POP-13432-002_A	21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
11951-005_B																
ASY-12669-001																
ASY-13842-001_B																
POP-13453-001_B	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	95,653	106,281	95,653	85,025	85,025	5,314	
Total Demand	138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	127,537	116,909	100,967	96,716	5,314	
Yield 0.94																
25 ASY-12120-001																
POP-13432-002_A																
11951-005_B																
ASY-12669-001																
ASY-13842-001_B	20,619	20,619	20,619	20,619	20,619	20,619	15,464	17,526	15,464	10,309	20,619	20,619	20,619	15,464	11,340	
ASY-13214-001_M	77,320	113,402	103,093	92,784	87,629	82,474	82,474	134,021	115,464	103,093	92,784	82,474	82,474	82,474		
Total Demand	97,938	134,021	123,711	113,402	108,247	103,093	97,938	151,546	125,773	113,402	123,711	113,402	97,938	93,814	5,155	
Yield 0.97																
26 ASY-13748-001																
POP-13432-002_A																
11951-005_B																
ASY-12669-001																
ASY-13842-001_B	20,619	20,619	20,619	20,619	20,619	20,619	15,464	17,526	15,464	10,309	20,619	20,619	20,619	15,464	11,340	
ASY-14138-001_B	82,474	82,474	92,784	92,784	87,629	10,309										
Total Demand	103,093	103,093	113,402	113,402	108,247	24,742										
Yield 0.97																
27 HDW-12670-001																
POP-13432-002_A																
11951-005_B																
ASY-12669-001	20,619	20,619	20,619	20,619	20,619	14,433										
ASY-13842-001_B																
Total Demand	20,619	20,619	20,619	20,619	20,619	15,464	15,464	17,526	15,464	10,309	20,619	20,619	20,619	15,464	11,340	
Yield 0.97																
28 CAP-06R80-007																
POP-13432-002_A	21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
11951-005_B																
ASY-12669-001																
ASY-13842-001_B																
Total Demand	21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
Yield 0.94																
29 RES-060R4-001																
POP-13432-002_A	42,512	42,512	42,512	42,512	42,512	31,884	36,136	31,884	21,256	42,512	42,512	42,512	31,884	23,382		
11951-005_B																
ASY-12669-001																
ASY-13842-001_B																
POP-12589-003_B	233,819	212,562	191,306	180,678	170,050	170,050	276,331	276,331	238,070	212,562	191,306	170,050	170,050	170,050	10,628	
Total Demand	276,331	255,075	233,819	223,191	212,562	201,934	312,467	308,216	259,326	233,819	255,075	233,819	201,934	193,432	10,628	
Yield 0.94																
30 RES-02000-002																
POP-13432-002_A	21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
11951-005_B																
ASY-12669-001																
ASY-13842-001_B																
POP-12589-003_B	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	95,653	95,653	85,025	85,025	5,314	
Total Demand	138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	116,909	127,537	116,909	100,967	96,716	5,314	
Yield 0.94																
31 RES-02740-002																
POP-13432-002_A	21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	21,256	21,256	21,256	15,942	11,691		
Yield 0.94																

Material Demand

Component | **Lead time : 1wks**

Component	wk19 5-May	wk20 12-May	wk21 19-May	wk22 26-May	wk23 2-Jun	wk24 9-Jun	wk25 16-Jun	wk26 23-Jun	wk27 30-Jun	wk28 7-Jul	wk29 14-Jul	wk30 21-Jul	wk31 28-Jul	wk32 4-Aug	wk33 11-Aug	wk34 18-Aug
32 RES-01001-006																
POP-13432-002_A	85,025	85,025	85,025	85,025	85,025	63,769	72,271	63,769	42,512	42,512	85,025	85,025	63,769	46,764		
11951-005_B																
ASY-12669-001																
ASY-13842-001_B																
POP-12589-003_B	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	106,281	95,653	85,025	85,025	5,314	
Total Demand	552,662	510,150	467,637	446,381	425,125	403,869	624,934	616,431	518,652	467,637	467,637	403,869	386,864	21,256		
Yeild 0.94																
33 RES-078R7-001																
POP-13432-002_A	21,256	21,256	21,256	21,256	21,256	15,942	18,068	15,942	10,628	10,628	21,256	21,256	15,942	11,691		
11951-005_B																
ASY-12669-001																
ASY-13842-001_B																
POP-12589-003_B	138,166	127,537	116,909	111,595	106,281	100,967	156,233	154,108	129,663	127,537	116,909	100,967	96,716	5,314		
Total Demand	467,637	425,125	382,612	361,356	340,100	340,100	552,662	476,140	425,125	382,612	340,100	340,100	21,256			
Yeild 0.94																
34 HDW-10154-001																
ASY-14540-002_1		55,670	9,278	6,186				8,247					4,124			
ASY-14540-004_1	722	31,546	33,608		10,515											
ASY-14540-001_1																
Total Demand	722	87,216	42,887	6,186	10,515			8,247					4,124			
Yeild 0.97																
35 ASY-14132-001_A																
ASY-13214-001_M	77,320	113,402	103,093	92,784	87,629	82,474	82,474	134,021	115,464	103,093	103,093	92,784	82,474	82,474	82,474	5,155
Total Demand	77,320	113,402	103,093	92,784	87,629	82,474	82,474	134,021	115,464	103,093	103,093	92,784	82,474	82,474	82,474	5,155
Yeild 0.97																
36 XDR-00011-001																
POP-12589-003_B	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	106,281	95,653	85,025	85,025	5,314	
Total Demand	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	106,281	95,653	85,025	85,025	5,314	
Yeild 0.94																
37 CAP-00680-002																
POP-12589-003_B	233,819	212,562	191,306	180,678	170,050	170,050	276,331	276,331	238,070	212,562	212,562	191,306	170,050	170,050	10,628	
Total Demand	233,819	212,562	191,306	180,678	170,050	170,050	276,331	276,331	238,070	212,562	212,562	191,306	170,050	170,050	10,628	
Yeild 0.94																
38 PTC5055-9/A																
PCB-13327-004_A																
Total Demand																
Yeild 0.97																
39 RK73H1ETTP1101F																
POP-12589-003_B	233,819	212,562	191,306	180,678	170,050	170,050	276,331	276,331	238,070	212,562	212,562	191,306	170,050	170,050	10,628	
Total Demand	233,819	212,562	191,306	180,678	170,050	170,050	276,331	276,331	238,070	212,562	212,562	191,306	170,050	170,050	10,628	
Yeild 0.94																
40 CAP-01004-017																
POP-12589-003_B	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	106,281	95,653	85,025	85,025	5,314	
Total Demand	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	106,281	95,653	85,025	85,025	5,314	
Yeild 0.94																
41 LED-00010-001																
POP-12589-003_B	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	106,281	95,653	85,025	85,025	5,314	
Total Demand	116,909	106,281	95,653	90,339	85,025	85,025	138,166	138,166	119,035	106,281	106,281	95,653	85,025	85,025	5,314	
Yeild 0.97																
42 CON-00149-001																
ASY-15028-001_C	810,722	907,216	907,216	907,216	412,371	412,371	412,371	371,134								
ASY-15028-001_D																
Total Demand	810,722	907,216	907,216	907,216	412,371	412,371	412,371	371,134								
Yeild 0.97																

Material Demand

Component   Lead time : 1wks

#	Item	Source / Row	Yield	wk19 5-May	wk20 12-May	wk21 19-May	wk22 26-May	wk23 2-Jun	wk24 9-Jun	wk25 16-Jun	wk26 23-Jun	wk27 30-Jun	wk28 7-Jul	wk29 14-Jul	wk30 21-Jul	wk31 28-Jul	wk32 4-Aug	wk33 11-Aug	wk34 18-Aug
43	RES-10052-001	Yield	0.97																
		ASY-15028-001_C		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
		ASY-15028-001_D		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
		Total Demand		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
44	RES-10053-001	Yield	0.97																
		ASY-15028-001_C		1,013,402	1,134,021	1,134,021	1,134,021	515,464	515,464	515,464	463,918								
		ASY-15028-001_D		1,013,402	1,134,021	1,134,021	1,134,021	515,464	515,464	515,464	463,918								
		Total Demand		1,013,402	1,134,021	1,134,021	1,134,021	515,464	515,464	515,464	463,918								
45	HDW-14711-001	Yield	0.97																
		ASY-15028-001_C		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
		ASY-15028-001_D		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
		Total Demand		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
46	HDW-15030-001	Yield	0.97																
		ASY-15028-001_C		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
		ASY-15028-001_D		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
		Total Demand		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
47	PTC5072-12/A	Yield	0.97																
		ASY-15028-001_C		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
		ASY-15028-001_D		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
		Total Demand		101,340	113,402	113,402	113,402	51,546	51,546	51,546	46,392								
48	PTC0449-11/A	Yield	0.90																
		PCB-13328-003_A		8,376	7,732	5,155	3,737												
		Total Demand		8,376	7,732	5,155	3,737												
49	PTC5083-12/NC	Yield	0.97																
		PCB-14792-005_B		500,000	422,222	333,333	277,778	180,000											
		Total Demand		500,000	422,222	333,333	277,778	180,000											
50	PTC0458-11/B	Yield	0.85																
		PCB-14180-002_A		47,938	42,526	38,660	29,639	29,639	29,639	1,160									
		Total Demand		47,938	42,526	38,660	29,639	29,639	29,639	1,160									
51	PTC0456-11/NC	Yield	0.95																
		PCB-14992-001_C		287,294	329,412	258,824	141,176	235,294	176,471	176,471	200,000	200,000	200,000	200,000	200,000	200,000	141,176		
		Total Demand		287,294	329,412	258,824	141,176	235,294	176,471	176,471	200,000	200,000	200,000	200,000	200,000	200,000	141,176		
53	PTC0457-7/NC	Yield	0.92																
		PCB-14993-001_C		31,579	63,158	52,632	10,526	52,632	52,632	42,105	52,632	7,368	7,368						
		Total Demand		31,579	63,158	52,632	10,526	52,632	52,632	42,105	52,632	7,368	7,368						
54	PTC0458-12/A	Yield	0.85																
		PCB-15033-001_B		195,652	271,739	108,696	86,957	104,348	46,739										
		Total Demand		195,652	271,739	108,696	86,957	104,348	46,739										
55	ASY-15028-001_D	Yield	0.97																
		PCB-14992-001_C		352,941	329,412	258,824	141,176	235,294	176,471	176,471	200,000	200,000	200,000	200,000	200,000	200,000	141,176		
		Total Demand		352,941	329,412	258,824	141,176	235,294	176,471	176,471	200,000	200,000	200,000	200,000	200,000	200,000	141,176		
56	ASY-15028-001_D	Yield	0.97																
		RES-10198-001		202,680	226,804	226,804	226,804	103,093	103,093	103,093	92,784	92,784							
		Total Demand		202,680	226,804	226,804	226,804	103,093	103,093	103,093	92,784	92,784							
57	POP-16094-005_A	Yield	0.97																
		RES-10249-001		202,680	226,804	226,804	226,804	103,093	103,093	103,093	92,784								
		Total Demand		202,680	226,804	226,804	226,804	103,093	103,093	103,093	92,784								
57	POP-16094-005_A	Yield	0.97																
		FIL-00165-001		206,186	309,278	329,897	432,990	329,897	123,711	206,186	453,608	334,021							
		Total Demand		206,186	309,278	329,897	432,990	329,897	123,711	206,186	453,608	334,021							
57	POP-16094-005_A	Yield	0.97																
		LED-00019-001		51,546	77,320	82,474	108,247	82,474	30,928	51,546	113,402	83,505							
		Total Demand		51,546	77,320	82,474	108,247	82,474	30,928	51,546	113,402	83,505							
	PTC0506-25/NC	Yield	0.97																
		Total Demand		6,443	9,665	10,309	13,531	10,309	3,866	6,443	14,175	10,438							

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Appendix F

				Operation details for one month					
Receiving Date	Order number	Quanitity	Weight (kg)	Legal Inspection Fee	Commodity Inspection Fee	Inspection Application Fee	Customs Clearance Fee	Revising Fee	Total
1-2-07	WBBW07010596	7	83.88				90.0		90.0
1-2-07	WBBW07010605	22	20953				90.0		90.0
1-2-07	WBAW07020005	30	5546.5				90.0		90.0
1-2-07	WBBW07020006	2	201				90.0		90.0
1-2-07	WBBW07020007	1	96				90.0		90.0
1-2-07	WBBW07020008	2	179				90.0		90.0
1-2-07	WBBW07020009	64	588				90.0		90.0
1-2-07	WBBW07020010	22	120.6				90.0		90.0
1-2-07	WBBW07020011	2	219				90.0		90.0
1-2-07	WBBW07020012	3	13.74				90.0		90.0
1-2-07	WBBW07020013	3	13.74				90.0		90.0
1-2-07	WBBW07020014	131	284.27				90.0		90.0
1-2-07	WBBW07020015	6	2140				90.0		90.0
1-2-07	WBBW07020020	50	9641.2	709.0	15.0	50.0	90.0		864.0
1-2-07	WBBW07020021	1	310				90.0		90.0
1-2-07	WBBW07020022	1	52.8	92.0	15.0	50.0	90.0		247.0
1-2-07	WBBW07020023	4	1299.5				90.0		90.0
1-2-07	WBBW07020032	1	248.76	6.0	15.0	50.0	90.0		161.0
1-2-07	WBBW07020033	5	27.3	6.0	15.0	50.0	90.0		161.0
1-2-07	WBBW07020034	3	11.51				90.0		90.0
1-2-07	WBBW07020036	12	4381				90.0		90.0
1-2-07	WBBW07010600	8	927				90.0		90.0
2-2-07	WBBW07020042	4	1719.74				90.0		90.0
2-2-07	WBBW07020044	3	49				90.0		90.0
2-2-07	WBBW07020045	11	1575				90.0		90.0
2-2-07	WBBW07020046	2	824				90.0		90.0
2-2-07	WBBW07020047	6	2919				90.0		90.0
2-2-07	WBBW07020050	4	173.5				90.0		90.0
2-2-07	WBBW07020052	6	2919				90.0		90.0
2-2-07	WBBW07020053	2	920				90.0		90.0
2-2-07	WBBW07020054	35	320.6				90.0		90.0
2-2-07	WBBW07020055	2	920				90.0		90.0
2-2-07	WBBW07020056	15	81	6.0	15.0	50.0	90.0		161.0
2-2-07	WBBW07020057	1	400				90.0		90.0
2-2-07	WBBW07020058	4	17.24				90.0		90.0
2-2-07	WBBW07020059	2	824				90.0		90.0
2-2-07	WBBW07020060	4	17.24				90.0		90.0
2-2-07	WBAW07020061	24	174.7				90.0		90.0
2-2-07	WBBW07020072	10	1807.86	6.0	15.0	50.0	90.0		161.0
2-2-07	WBBW07020073	4	1720				90.0		90.0
2-2-07	WBBW07020077	14	5391.68				90.0		90.0
5-2-07	WBBW07020078	3	1460	6.0	15.0	50.0	90.0		161.0
5-2-07	WBBW07020081	57	569.8				90.0		90.0
5-2-07	WBBW07020082	7	821				90.0		90.0
5-2-07	WBBW07020083	14	5391.68				90.0		90.0
5-2-07	WBBW07020086	1	6.7				90.0		90.0
5-2-07	WBBW07020087	5	29.76				90.0		90.0
5-2-07	WBBW07020088	5	29.76				90.0		90.0

5-2-07	WBBW07020089	13	2839.8	92.0	15.0	50.0	90.0		247.0
5-2-07	WBBW07020090	59	353.5				90.0		90.0
5-2-07	WBBW07020092	6	2000.06				90.0		90.0
5-2-07	WBBW07020093	3	1460	6.0	15.0	50.0	90.0		161.0
5-2-07	WBBW07020101	64	288	816.0	15.0	50.0	90.0		971.0
5-2-07	WBBW07020102	6	2000				90.0		90.0
6-2-07	WBBW07020104	29	293.5				90.0		90.0
6-2-07	WBBW07020105	10	8292.8				90.0		90.0
6-2-07	WBBW07020106	10	8292.8				90.0		90.0
6-2-07	WBBW07020107	10	54.7				90.0		90.0
6-2-07	WBBW07020108	19	100.8	6.0	15.0	50.0	90.0		161.0
6-2-07	WBBW07020109	4	645				90.0		90.0
6-2-07	WBBW07020110	6	21.5				90.0		90.0
6-2-07	WBBW07020111	11	81.2				90.0		90.0
6-2-07	WBBW07020112	8	1015				90.0		90.0
6-2-07	WBBW07020113	3	49				90.0		90.0
6-2-07	WBBW07020114	2	12.32				90.0		90.0
6-2-07	WBBW07020115	2	12.32				90.0		90.0
6-2-07	WBBW07020116	2	920				90.0		90.0
6-2-07	WBBW07020117	2	920				90.0		90.0
6-2-07	WBBW07020118	29	1054.79				90.0		90.0
6-2-07	WBBW07020119	22	8810.08	6.0	15.0	50.0	90.0		161.0
6-2-07	WBBW07020121	18	87				90.0		90.0
6-2-07	WBBW07020122	3	21.5				90.0		90.0
6-2-07	WBBW07020123	11	81.2				90.0		90.0
6-2-07	WBBW07020124	3	52				90.0		90.0
7-2-07	WBBW07020125	278	2037				90.0		90.0
7-2-07	WBBW07020126	10	34				90.0		90.0
7-2-07	WBBW07020127	32	294	427.0	15.0	50.0	90.0		582.0
7-2-07	WBBW07020128	519	4527				90.0		90.0
7-2-07	WBBW07020129	7	821				90.0		90.0
7-2-07	WBBW07020130	5	23.1				90.0		90.0
7-2-07	WBBW07020131	16	6559.08				90.0		90.0
7-2-07	WBBW07020132	16	6608.95				90.0		90.0
7-2-07	WBBW07020133	7	3040.5				90.0		90.0
7-2-07	WBBW07020134	1	176.5				90.0		90.0
7-2-07	WBBW07020135	2	824				90.0		90.0
7-2-07	WBBW07020136	32	28.62				90.0		90.0
7-2-07	WBBW07020137	80	351				90.0		90.0
7-2-07	WBBW07020138	2	866				90.0		90.0
7-2-07	WBBW07020139	5	18.92				90.0		90.0
7-2-07	WBBW07020140	5	18.92				90.0		90.0
7-2-07	WBBW07020141	7	3040.5				90.0		90.0
7-2-07	WBBW07020142	29	293.5				90.0		90.0
7-2-07	WBBW07020143	7	40.5				90.0		90.0
8-2-07	WBBW07020144	22	7914	6.0	15.0	50.0	90.0		161.0
8-2-07	WBBW07020145	22	10970	6.0	15.0	50.0	90.0		161.0
8-2-07	WBBW07020146	20	6377	6.0	15.0	50.0	90.0		161.0
8-2-07	WBBW07020147	4	18				90.0		90.0
8-2-07	WBBW07020148	6	2472				90.0		90.0

8-2-07	WBBW07020149	6	2472				90.0		90.0
8-2-07	WBBW07020150	48	441				90.0		90.0
8-2-07	WBBW07020151	27	1081	6.0	15.0	50.0	90.0		161.0
8-2-07	WBBW07020152	4	281				90.0		90.0
8-2-07	WBBW07020153	2	824				90.0		90.0
8-2-07	WBBW07020154	1	10.2	6.0	15.0	50.0	90.0		161.0
8-2-07	WBBW07020155	1	430	563.0	15.0	50.0	90.0		718.0
8-2-07	WBBW07020156	32	5134.6				90.0		90.0
8-2-07	WBBW07020157	150	645	6.0	15.0	50.0	90.0		161.0
8-2-07	WBBW07020158	39	10113				90.0		90.0
8-2-07	WBBW07020159	12	2888.89				90.0		90.0
8-2-07	WBBW07020160	3	1038.1				90.0		90.0
8-2-07	WBBW07020161	1	50.8				90.0		90.0
8-2-07	WBAW07020162	12	2888.89				90.0		90.0
8-2-07	WBBW07020163	4	15.82				90.0		90.0
8-2-07	WBBW07020164	4	15.82				90.0		90.0
8-2-07	WBBW07020165	60	342.8	461.0	15.0	50.0	90.0		616.0
8-2-07	WBBW07020166	65	543.4				90.0		90.0
8-2-07	WBBW07020167	53	1038				90.0		90.0
9-2-07	WBAW07020168	37	7902.5				90.0		90.0
9-2-07	WBBW07020169	10	3749.6				90.0		90.0
9-2-07	WBBW07020170	1	6.7				90.0		90.0
9-2-07	WBBW07020171	4	2330	6.0	15.0	50.0	90.0		161.0
9-2-07	WBBW07020172	1	444.92				90.0		90.0
9-2-07	WBBW07020175	1	6.12				90.0		90.0
9-2-07	WBBW07020176	1	6.12				90.0		90.0
9-2-07	WBBW07020177	1	176.5				90.0		90.0
9-2-07	WBBW07020178	95	773.16				90.0		90.0
9-2-07	WBBW07020179	124	743.8				90.0		90.0
12-2-07	WBBW07020180	4	557				90.0		90.0
12-2-07	WBAW07020181	20	3712				90.0		90.0
12-2-07	WBBW07020182	2	18.12				90.0		90.0
12-2-07	WBBW07020183	3	950.67				90.0		90.0
12-2-07	WBBW07020184	3	1236				90.0		90.0
12-2-07	WBBW07020185	1	413				90.0		90.0
12-2-07	WBBW07020186	1	413	6.0	15.0	50.0	90.0		161.0
12-2-07	WBBW07020187	3	950.67				90.0		90.0
12-2-07	WBBW07020188	3	1236				90.0		90.0
12-2-07	WBBW07020189	10	3749.6				90.0		90.0
12-2-07	WBBW07020190	14	5392	6.0	15.0	50.0	90.0		161.0
12-2-07	WBBW07020191	13	69.2	6.0	15.0	50.0	90.0		161.0
12-2-07	WBBW07020192	7	39.6	6.0	15.0	50.0	90.0		161.0
12-2-07	WBBW07020193	3	594				90.0		90.0
12-2-07	WBAW07020194	39	10129.9				90.0		90.0
12-2-07	WBBW07020195	49	245.8				90.0		90.0
12-2-07	WBBW07020196	21	445				90.0		90.0
12-2-07	WBBW07020197	2	2.1				90.0		90.0
12-2-07	WBBW07020198	10	130.1				90.0		90.0
12-2-07	WBBW07020199	1	120.54	6.0	15.0	50.0	90.0		161.0
12-2-07	WBBW07020200	3	190.4	6.0	15.0	50.0	90.0		161.0

12-2-07	WBBW07020201	9	57.7				90.0		90.0
12-2-07	WBBW07020202	4	2330	6.0	15.0	50.0	90.0		161.0
12-2-07	WBBW07020203	2	12.32				90.0		90.0
12-2-07	WBBW07020204	2	12.32				90.0		90.0
12-2-07	WBBW07020205	95	738				90.0		90.0
12-2-07	WBBW07020206	1	400				90.0		90.0
12-2-07	WBBW07020207	9	57.7				90.0		90.0
13-2-07	WBBW07020208	2	18.12				90.0		90.0
13-2-07	WBBW07020209	2	197				90.0		90.0
13-2-07	WBBW07020210	23	123.4				90.0		90.0
13-2-07	WBBW07020211	25	217.5				90.0		90.0
13-2-07	WBBW07020212	2	32				90.0		90.0
13-2-07	WBBW07020214	2	430	6.0	15.0	50.0	90.0		161.0
13-2-07	WBBW07020215	4	1340				90.0		90.0
13-2-07	WBBW07020216	2	430				90.0		90.0
13-2-07	WBBW07020217	5	2060				90.0		90.0
13-2-07	WBBW07020218	5	2060				90.0		90.0
13-2-07	WBAW07020219	20	3646				90.0		90.0
13-2-07	WBAW07020220	1	1750				90.0		90.0
13-2-07	WBBW07020222	2	831				90.0		90.0
13-2-07	WBBW07020223	3	12.52				90.0		90.0
13-2-07	WBBW07020224	3	12.52				90.0		90.0
13-2-07	WBBW07020226	135	580.5	6.0	15.0	50.0	90.0		161.0
13-2-07	WBBW07020227	4	1639.1				90.0		90.0
13-2-07	WBBW07020228	5	24.1				90.0		90.0
14-2-07	WBBW07020229	1	1				90.0		90.0
14-2-07	WBBW07020230	8	42.3	6.0	15.0	50.0	90.0		161.0
14-2-07	WBBW07020231	34	205.9	6.0	15.0	50.0	90.0		161.0
14-2-07	WBBW07020232	2	169				90.0		90.0
14-2-07	WBBW07020233	1	99				90.0		90.0
14-2-07	WBBW07020234	3	52				90.0		90.0
14-2-07	WBBW07020235	1	15.64	6.0	15.0	50.0	90.0		161.0
14-2-07	WBBW07020236	5	2060				90.0		90.0
14-2-07	WBBW07020237	5	2060				90.0		90.0
14-2-07	WBBW07020238	24	117				90.0		90.0
14-2-07	WBBW07020239	18	172.9				90.0		90.0
14-2-07	WBBW07020240	25	27034				90.0		90.0
14-2-07	WBBW07020241	1	99				90.0		90.0
14-2-07	WBBW07020242	25	217.5				90.0		90.0
14-2-07	WBBW07020243	12	132.2				90.0		90.0
14-2-07	WBBW07020244	51	465.6				90.0		90.0
14-2-07	WBBW07020245	11	1926.6	92.0	15.0	50.0	90.0		247.0
14-2-07	WBBW07020246	1	22.2	6.0	15.0	50.0	90.0		161.0
14-2-07	WBBW07020247	2	23				90.0		90.0
14-2-07	WBBW07020248	80	1639				90.0		90.0
14-2-07	WBBW07020249	2	316.3				90.0		90.0
14-2-07	WBBW07020250	5	2060				90.0		90.0
14-2-07	WBBW07020251	1	2.1				90.0		90.0
14-2-07	WBBW07020252	8	3296				90.0		90.0
14-2-07	WBBW07020253	1	5.89				90.0		90.0

Date	Code	Qty	Weight	C1	C2	C3	C4	C5	Total
15-2-07	WBBW07020255	16	6609	6.0	15.0	50.0	90.0		161.0
15-2-07	WBBW07020256	16	4548	6.0	15.0	50.0	90.0		161.0
15-2-07	WBBW07020257	16	6559				90.0		90.0
15-2-07	WBBW07020258	15	68				90.0		90.0
15-2-07	WBBW07020259	53	244				90.0		90.0
15-2-07	WBBW07020260	78	2693	6.0	15.0	50.0	90.0		161.0
15-2-07	WBAW07020261	28	64.64				90.0		90.0
15-2-07	WBBW07020262	2	32				90.0		90.0
15-2-07	WBBW07020263	2	316.3				90.0		90.0
15-2-07	WBBW07020264	4	1569.68				90.0		90.0
15-2-07	WBBW07020265	11	4189				90.0		90.0
15-2-07	WBBW07020266	1	5.89				90.0		90.0
15-2-07	WBAW07020267	10	55.4				90.0		90.0
15-2-07	WBBW07020268	20	9114	6.0	15.0	50.0	90.0		161.0
15-2-07	WBBW07020269	20	7477	6.0	15.0	50.0	90.0		161.0
15-2-07	WBBW07020270	32	29	6.0	15.0	50.0	90.0		161.0
15-2-07	WBBW07020271	33	1273				90.0		90.0
16-2-07	WBBW07020272	4	1648				90.0		90.0
16-2-07	WBBW07020273	20	112.9				90.0		90.0
16-2-07	WBBW07020274	2					90.0		90.0
16-2-07	WBBW07020275	1	529.4				90.0		90.0
16-2-07	WBBW07020276	41	659				90.0		90.0
16-2-07	WBBW07020277	29	953	6.0	15.0	50.0	90.0		161.0
16-2-07	WBBW07020278	11	4189				90.0		90.0
16-2-07	WBBW07020279	1	529.4				90.0		90.0
16-2-07	WBBW07020280	4	1570				90.0		90.0
16-2-07	WBBW07020281	1	5.89				90.0		90.0
16-2-07	WBBW07020282	4	594.55				90.0		90.0
16-2-07	WBBW07020283	20	9419	6.0	15.0	50.0	90.0		161.0
16-2-07	WBBW07020284	4	1570				90.0		90.0
25-2-07	WBBW07020285	1	96				90.0		90.0
25-2-07	WBBW07020286	2	201				90.0		90.0
25-2-07	WBBW07020287	4	1339				90.0		90.0
25-2-07	WBBW07020288	16	7903				90.0		90.0
25-2-07	WBBW07020289	4	1339				90.0		90.0
25-2-07	WBBW07020290	2	12				90.0		90.0
25-2-07	WBBW07020291	5	808.02				90.0		90.0
25-2-07	WBBW07020292	4	1648				90.0		90.0
25-2-07	WBBW07020293	9	1227				90.0		90.0
25-2-07	WBBW07020294	1	248.76	6.0	15.0	50.0	90.0		161.0
26-2-07	WBBW07020295	1	73.96	6.0	15.0	50.0	90.0		161.0
26-2-07	WBBW07020296	2	264				90.0		90.0
26-2-07	WBBW07020297	14	2236	6.0	15.0	50.0	90.0		161.0
26-2-07	WBBW07020299	60	808				90.0		90.0
26-2-07	WBBW07020300	20	3636.2	1225.0	15.0	50.0	90.0		1380.0
26-2-07	WBBW07020301	3	1419	6.0	15.0	50.0	90.0		161.0
26-2-07	WBBW07020302	5	39.3				90.0		90.0
26-2-07	WBBW07020303	4	47.7				90.0		90.0
26-2-07	WBBW07020304	7	34.4				90.0		90.0
27-2-07	WBBW07020306	1	38				90.0		90.0

Date	Code								Total
27-2-07	WBBW07020307	3	1460	6.0	15.0	50.0	90.0		161.0
27-2-07	WBBW07020308	1	36.2				90.0		90.0
27-2-07	WBBW07020309	1	128				90.0		90.0
27-2-07	WBBW07020310	2	824				90.0		90.0
27-2-07	WBBW07020311	2	824				90.0		90.0
27-2-07	WBBW07020312	1	128	6.0	15.0	50.0	90.0		161.0
27-2-07	WBBW07020313	32	537.6				90.0		90.0
27-2-07	WBBW07020314	4	23.68				90.0		90.0
27-2-07	WBBW07020315	14	2175				90.0		90.0
27-2-07	WBBW07020316	16	2570				90.0		90.0
27-2-07	WBBW07020317	5	1906.8				90.0		90.0
27-2-07	WBBW07020318	9	87				90.0		90.0
27-2-07	WBBW07020319	2	10				90.0		90.0
27-2-07	WBBW07020320	176	976.2				90.0		90.0
27-2-07	WBBW07020321	186	1314.6				90.0		90.0
28-2-07	WBBW07020322	6	37				90.0		90.0
28-2-07	WBBW07020323	3	166				90.0		90.0
28-2-07	WBBW07020324	34	205.9	6.0	15.0	50.0	90.0		161.0
28-2-07	WBBW07020325	3	1030				90.0		90.0
28-2-07	WBBW07020326	2	24.71				90.0		90.0
28-2-07	WBBW07020327	4	1293.6				90.0		90.0
28-2-07	WBBW07020328	3	1030				90.0		90.0
28-2-07	WBBW07020329	1	36.2	6.0	15.0	50.0	90.0		161.0
28-2-07	WBBW07020330	76	959				90.0		90.0
28-2-07	WBBW07020331	50	646				90.0		90.0
28-2-07	WBBW07020332	5	1545.4				90.0		90.0
28-2-07	WBBW07020333	13	5947				90.0		90.0
28-2-07	WBBW07020334	3	1460	6.0	15.0	50.0	90.0		161.0
28-2-07	WBBW07020335	360	10454	6.0	15.0	50.0	90.0		161.0
28-2-07	WBBW07020336	50	814				90.0		90.0
28-2-07	WBBW07020337	3	784.5				90.0		90.0
28-2-07	WBBW07020338	2	12.36				90.0		90.0
28-2-07	WBBW07020340	60	258	6.0	15.0	50.0	90.0		161.0
28-2-07	WBBW07020341	2	18.5				90.0		90.0
28-2-07	WBBW07020342	15	15296				90.0		90.0
								100.0	100.0
								100.0	100.0
								100.0	100.0
								100.0	100.0
	One Inspection Document							200.0	200.0
Total				4759.0	840.0	2800.0	25470.0	600.0	**34469.0**