



# QUALITY MANUAL

RED CHECK DENOTES THIS IS A CONTROLLED COPY

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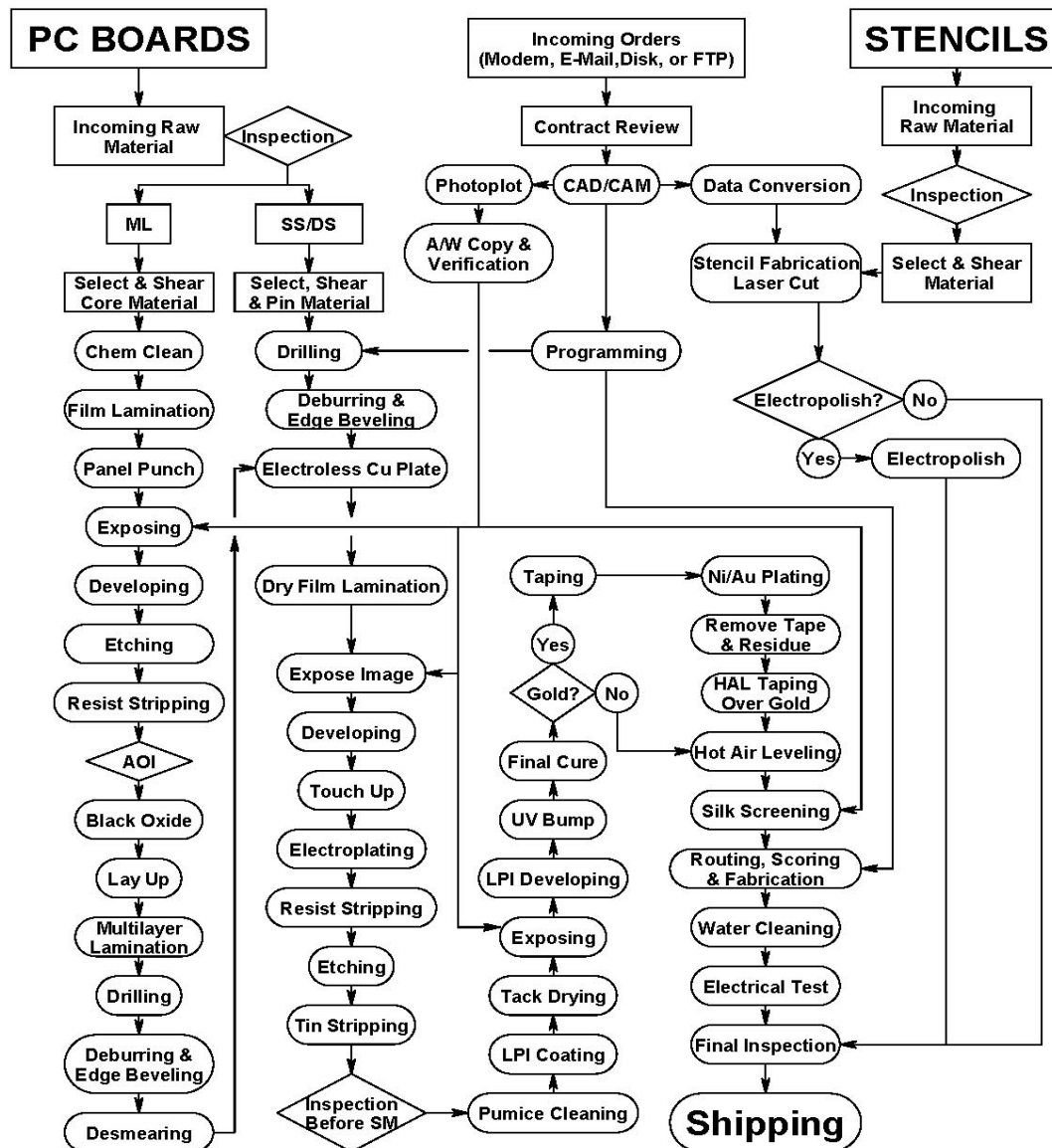
## CONTENTS

SECTION	DESCRIPTION	PAGE NO.
<b>1.0</b>	<b>Introduction of the Company</b>	<b>3</b>
<b>2.0</b>	<b>Organization Chart</b>	<b>4</b>
<b>3.0</b>	<b>Quality and Management Roles</b>	<b>5</b>
3.1	Quality Roles	
3.2	Management Roles	
<b>4.0</b>	<b>Quality Management System</b>	<b>7</b>
4.1	General Requirements	
4.2	Documentation Requirements	
<b>5.0</b>	<b>Management Responsibility</b>	<b>9</b>
5.1	Management Commitment	
5.2	Customer Focus	
5.3	Quality Policy	
5.4	Planning	
5.5	Responsibility, Authority and Communication	
5.6	Management Review	
<b>6.0</b>	<b>Resource Management</b>	<b>11</b>
6.1	Provision of Resources	
6.2	Human Resources	
6.3	Infrastructure	
6.4	Work Environment	
<b>7.0</b>	<b>Product Realization</b>	<b>12</b>
7.1	Planning of Product Realization	
7.2	Customer Related Processes	
7.3	Design and Development	
7.4	Purchasing	
7.5	Product and Service Provision	
7.6	Control of Monitoring and Measuring Devices	
<b>8.0</b>	<b>Measurement, Analysis and Improvement</b>	<b>14</b>
8.1	General	
8.2	Monitoring and Measurement	
8.3	Control of Nonconforming Products	
8.4	Analysis of Data	
8.5	Improvement	
<b>9.0</b>	<b>Index of Standard Operating Procedures</b>	<b>16</b>
<b>10.0</b>	<b>Revision Log</b>	<b>17</b>

### 1.0 INTRODUCTION TO THE COMPANY

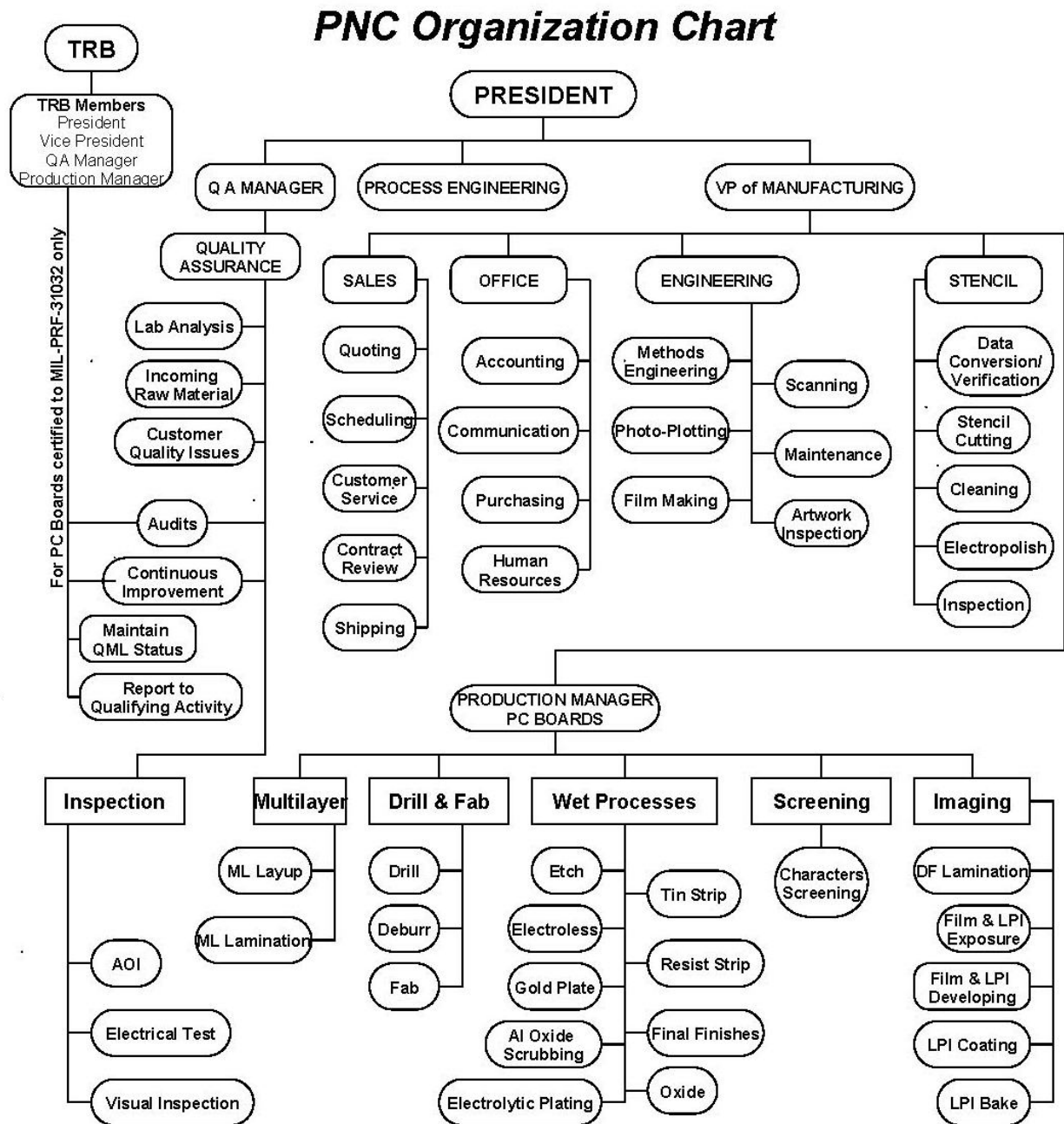
PNC, Inc. (PNC) has been located in New Jersey under current management since 1996. This is the only PNC manufacturing site. PNC, Inc. manufactures Printed Circuit boards for various types of applications. In addition PNC manufactures solder paste stencils for surface mount assembly. The following process flow chart depicts the basic steps of manufacturing PC boards and SMT stencils.

## *PNC Manufacturing Process Flow Diagram*



## 2.0 ORGANIZATION CHART:

Following Organization Chart reflects the current organization structure of PNC.



### **3.0 QUALITY & MANAGEMENT ROLES.**

#### **3.1 QUALITY ROLES:**

##### **The Quality Department shall:**

- 3.1.1 Together with Manufacturing, provide leadership for maintaining and constantly improving product quality.
- 3.1.2 Develop and maintain quality systems to assure the quality of products.
- 3.1.3 Ascertain the nonconforming materials and products.
- 3.1.4 Provide leadership and assistance to the business in the areas of statistical quality control, and other areas involved in the application of statistical techniques.
- 3.1.5 Maintain a Quality Manual defining PNC's quality systems, policies, and procedures. Develop, implement, and maintain a system which provides positive control of all documents within the PNC quality management system, and which assures that only current, properly approved documents are available to and used by all PNC personnel.
- 3.1.6 Perform audits of the quality systems of PNC suppliers.
- 3.1.7 Provide leadership for quality training and quality awareness within PNC.
- 3.1.8 Establish and administer an internal audit program which will assure that all elements of the PNC quality management system are audited at least every six months, and that they comply with specified requirements as stated in this manual and lower level documents comprising the quality management system.
- 3.1.9 Bring to the attention of PNC Management, the problems identified with the PNC quality management system (generally, these will be found during internal audits), obtain support in resolving these problems, and document any changes to the system that are required to prevent the problems from recurring.
- 3.1.10 Provide test data to customers when required by the customers.
- 3.1.11 Define, implement, and administer the PNC Corrective and Preventive Action System.
- 3.1.12 Maintain a Customer Complaint database and periodically summarize and issue reports on customer complaints.
- 3.1.13 Issue the authorization for a customer to return material involved in a quality complaint. When appropriate, conduct field investigations of product quality complaints so that the corrective actions can be taken to prevent a recurrence.
- 3.1.14 Communicate to customers the actions taken to resolve quality complaints or other customer-related issues, and the actions taken to prevent their recurrence.
- 3.1.15 Assure the product leaving the plant meets the specified requirements.
- 3.1.16 Audit finished product for visual and dimensional defects to determine outgoing quality.
- 3.1.17 Test and/or inspect finished product to assure adherence to specifications.
- 3.1.18 Determine the disposition of nonconforming raw materials, in process, and finished product.

#### **3.2 MANAGEMENT ROLES:**

##### **3.2.1 The President shall:**

- 3.2.1.1 Issue a Quality statement.
- 3.2.1.2 Communicate the Quality Policy to all employees.

- 3.2.1.3 Support the Quality management system with all the resources needed to meet the Quality Policy.
- 3.2.1.4 Appoint a Management Representative who shall be responsible for the PNC Quality Management System.
- 3.2.1.5 Review the Quality System at defined intervals to ensure its continuing suitability and effectiveness in satisfying the requirements of International Standards ISO9001:2000 and PNC's Quality Policy and Objectives.
- 3.2.1.6 Appoint a Technical Review Board that is responsible for the interpretation of the requirements of this document, all Level-2 (Manufacturing Procedures) Documentation, and all associated specification sheets for printed circuit boards that are certified to MIL-PRF-31032A, 31032/1B and 31032/2A performance specifications.

**3.2.2 The Manufacturing Department shall:**

- 3.2.2.1 Support the PNC Corrective Action and Preventive System by investigating complaints to determine the root causes related to production operation and to implement corrective actions and appropriate improvements in the quality system.
- 3.2.2.2 Produce products in accordance with current policies, procedures, and instructions, while observing safe work practices in the work place at all times.
- 3.2.2.3 Maintain control of the process within the control limits established on statistical process control charts, when specified as part of process control.
- 3.2.2.4 Develop production plans and schedules for all manufacturing related areas of the business.
- 3.2.2.5 Continually strive for improved uniformity for established product attributes or parameters, via improvement in raw material quality and performance, equipment maintenance and operation, processes and process control, and sound management practices.
- 3.2.2.6 Maintain an effective working partnership among all personnel by encouraging employee suggestions and active participation in the quality improvement process; in order to continually improve the quality of PNC products, packaging, and delivery.

**3.2.3 The Sales Department shall:**

- 3.2.3.1 Secure up-to-date customer specifications and drawings; participate in customer specification reviews to help assure that PNC can meet all customer requirements.
- 3.2.3.2 Establish with PNC customers the relationship that facilitates mutual understanding of product specifications, test methods, and product performance characteristics and limitations.
- 3.2.3.3 Execute responsibilities related to Order Acceptance through entry of customer order in the schedule log.
- 3.2.3.4 Maintain the customer pricing system to ensure access to up-to-date price information for order entry.

**3.2.4 The Purchasing Department shall:**

- 3.2.4.1 Purchase materials and supplies which consistently conform to the requirements documented between PNC and its suppliers, based upon PNC's specifications and mutual understanding of the supplier's capabilities and PNC needs.
- 3.2.4.2 Perform supplier evaluation at regular interval. If required, conduct site evaluation.

**3.2.5 The Technical Review Board (TRB) shall:**

- 3.2.5.1 Develop and implement the Quality Management (QM) plan,,
- 3.2.5.2 Maintain all certified and qualified processes.
- 3.2.5.3 Control process changes,
- 3.2.5.4 Perform reliability data analysis, failure analysis, corrective actions, QML printed board recall procedures, and qualification status of technology for boards certified to MIL-PRF-31032 Performance Specifications.
- 3.2.5.5 Be responsible for the performance of a periodic survey (semi-annual) to evaluate compliance to this QM plan and report in writing its findings to the Qualifying Activity that grants certification and qualification status to QML-31032: DSCC-VQE, P.O. BOX3990, Columbus, OH 43218-3990.Or by Electronic Mail at: [5998.Qualifications@dsc.dla.mil](mailto:5998.Qualifications@dsc.dla.mil).

**4.0 QUALITY MANAGEMENT SYSTEM:****4.1 General Requirements:**

PNC recognizes that leading a successful operation requires to be managed in a systematic and visible manner. As a result PNC has established, documented and implemented a quality management system.

PNC has identified its processes so they are clearly understood and can be more easily applied, managed and improved. The criteria and methods required for the effective operation and control of these processes have been determined.

PNC makes the necessary resources and information available to support the operation and effective control of the processes. The processes are monitored, measured, and analyzed to determine any actions needed to achieve the planned results and continuous improvements.

PNC's quality management system is managed in accordance with the requirements of the ISO 9001:2000 standard and MIL-PRF-31032A, 31032/1B, and 31032/2A Performance Specifications. Any outsourced processes are identified and controlled through our purchasing process PUR-01.

**4.2 Document Requirements:****4.2.1 General:**

PNC's quality management system includes the procedures required by ISO 9001:2000, MIL-PRF-31032A, 31032/1B, and 31032/2A Performance Specifications, and other documents required for the effective operation and control of the processes. PNC's documentation also includes this quality manual, statements of quality policy and objectives, quality plans, instructions, forms, and other documents, as appropriate.

The extent and nature of process documents is based on complexity of the processes. PNC reviews contractual requirements, applicable standards and relevant regulations to ensure the necessary documentation is in place.

**4.2.2 Quality Manual:**

This Quality Manual is a statement by PNC that its quality management system is compliant with ISO9001:2000 and MIL-PRF-31032A, 31032/1B, and 31032/2A Performance Specifications. Any exclusion is explained with justification in the product realization section of this manual. The scope of PNC's quality management is manufacturing of Printed Circuit Boards and SMT Stencils.

The sequence and interaction of the processes are shown in process flow charts on section 1 of this manual. The quality manual is maintained and controlled to ensure its adequacy and currency. The quality department maintains the master copy of this manual. When amendments are made to the manual, the new revised copy is sent to all authorized copyholders. Copies issued to unauthorized persons like visiting auditors and major customers are stamped "Uncontrolled Copy". PNC also posts electronic version of this manual, an Uncontrolled Copy and a read only file, on its website on the internet.

#### **4.2.3 Control of Documents:**

Documents are approved for adequacy before they are issued for use. Documents are reviewed and updated as necessary and re-approved prior to release for use. The changes are identified and communicated to the documents users.

Relevant versions of applicable documents are available at their point of use. Documents are maintained to ensure they remain legible and readily identifiable.

A master list is maintained with the current revision status of controlled documents to prevent unintended use of obsolete documents. If superseded documents are retained for any purpose, they are suitably identified to avoid inadvertent use. Obsolete documents are promptly removed from all points of use.

Documents of external origin are identified and their distribution is controlled.

There are two copies of complete set of procedures as listed in Section 9.0 of this manual. The Master copy is kept in the Quality office and other is kept at a designated location on the production floor. This production floor copy is available to every production employee for reference. Amendments to these procedures are authorized only by the Quality Manager.

Controlled standards and specifications include American National Standards, IPC Standards, International Standards and MIL-PRF-31032A, 31032/1B, and 31032/2A Performance Specifications. They are kept in the Quality Office. Updated issues are purchased when specifically required and authorized. It is the user's responsibility to ensure the current revision level is being used.

#### **4.2.4 Control of Records:**

Records required for the quality management system are established, maintained and controlled as evidence of conformance to requirements and of effective operation. A documented procedure is established for identifying, storing, protecting, retrieving, retaining and disposition of the quality records. Records are analyzed to provide input to corrective and preventive actions, as well as, to manage and improve the quality management system.

Responsibility for control, proper storage area, minimum retention time and disposal of records applicable to individual processes is assigned in manuals for those processes. See procedure DOC-05.

## 5.0 MANAGEMENT RESPONSIBILITY:

### 5.1 Management Commitment:

PNC demonstrates its management commitment to the development and implementation of quality system by maintaining our quality policy, monitoring quality objectives, providing adequate resources and conducting periodic reviews. We communicate to the employees the importance of meeting customer as well as legal and regulatory requirements. Persons with responsibility to maintain a process with full authority to achieve the process objectives are identified. The process inputs and outputs are monitored to verify they are linked and operate effectively. The Technical Review Board (TRB) will review all nonconforming product that is manufactured to MIL-PRF-31032A, 31032/1B, and 31032/2A Performance Specifications, document and report its disposition on a regular basis to the Qualifying Activity of the Defense Supply Center Columbus, attention: DSCC/VAC.

### 5.2 Customer Focus:

Our success as an organization depends on understanding and satisfying needs and expectations of our customers. We try to meet or exceed requirements of their product specifications. As part of our customer focus, we form a partnership with our customers to share information, create mutual business values and improve our products.

### 5.3 Quality Policy:

PNC is a service company and its main objective is to satisfy customer requirements. PNC is committed to comply with all customer specifications as well as regulatory requirements. It also provides mechanism for continuous improvement through periodic review of Quality Objectives. Late deliveries are identified and analyzed in order to improve delivery record. PNC's quality policy is summarized as follows.

#### Total customer satisfaction through:

- ✓ Commitment to quality,
- ✓ Responsiveness,
- ✓ Continuous improvement and
- ✓ On time delivery.

This quality policy is communicated at new employee training sessions and posted throughout the plant. Internal audits are used to make sure employees understand what the quality policy means to them and to the company. This quality policy is periodically reviewed for continuing suitability to PNC's quality objectives.

### 5.4 Planning:

#### 5.4.1 Quality Objectives:

PNC's prime quality objectives are zero defect products, 100% first pass yield and on time delivery. These quality objectives are conveyed to all employees. These quality objectives are consistent to our quality policy. The objectives are monitored to verify they are being satisfied and to revise them as necessary.

#### 5.4.2 Quality Planning:

PNC plans for the activities and resources needed to satisfy the quality policy. Our planning process considers customer needs, product requirements, process performance, lessons learned, and improvement opportunities. PNC also has documented procedures for maintaining integrity of the quality management system when changes to the quality system are planned and implemented.

**5.5 Responsibility, Authority and Communication:****5.5.1 Responsibility and Authority:**

Responsibilities and authority are defined and described in detail in section 1 of this manual. Specific responsibilities are defined in quality plans, procedures and work instructions.

**5.5.2 Management Representative:**

The President of PNC, INC. shall appoint a Management Representative, who, irrespective of his/her other responsibilities, shall have the authority for ensuring the requirements of International Standard ISO9001:2000 and MIL-PRF-31032A, 31032/1B, and 31032/2A Performance Specifications are implemented and maintained at PNC. This individual is the Quality Manager. The Quality Manager also reports to the president on the performance of the quality system and need for improvement.

In the absence of the Quality Manager, President of the organization shall assume the duties of Management Representative.

Management Representative is also our liaison to customers and other parties relating to quality management system.

**5.5.3 Internal communication:**

PNC communicates quality requirements, objectives and accomplishments to all levels of our organization. This communication takes place through team meetings, production meetings and notice boards.

**5.6 Management Reviews:****5.6.1 General:**

The management reviews the quality management system at least quarterly to ensure its adequacy and effectiveness. The reviews analyze current activities that may require changes. Opportunities for improvements are identified. Reviews are focused on performance improvement and resource planning. Results of management reviews are recorded and may include observations, recommendations, assignments, decisions and conclusions.

**5.6.2 Review Inputs:**

Following topics are covered in management reviews.

- 5.6.2.1 Internal and external audit results.
- 5.6.2.2 Customer complaints and satisfaction requirements.
- 5.6.2.3 Status of preventive and corrective actions.
- 5.6.2.4 Process performance and product conformity.
- 5.6.2.5 Results of change in processes.
- 5.6.2.6 Financial effects of quality activities.
- 5.6.2.7 Follow up actions from earlier management reviews.
- 5.6.2.8 Recommendations for improvement.
- 5.6.2.9 Technical Review Board nonconforming product disposition

**5.6.3 Review Outputs:**

Management review output includes decisions made and actions assignments to improve effectiveness of the system, processes, customer requirements and resource needs.

## **6.0 RESOURCE MANAGEMENT:**

Resources are essential to implement and achieve our business strategies and quality objectives. We identify and make resources available, including the necessary people, equipment, organization structures, information, work environment and finances.

### **6.1 Provision of Resources:**

Resources are provided in timely manner to implement and improve processes of the quality management system and to enhance customer satisfaction by meeting customer requirements. Based on production meetings and management reviews resource requirements are identified.

### **6.2 Human Resources:**

#### **6.2.1 General:**

To achieve objectives and stimulate innovation, we encourage the active involvement of our employees in the quality Management system. Conditions are fostered that encourage innovation, teamwork, suggestions and opinions. We ensure that persons performing work are competent on the basis of education, training, and experience.

#### **6.2.2 Competence, Awareness and Training:**

We identify the competence needed for each process and assess the qualification needed for employee performing the activity. Proper training is provided to ensure qualified persons perform the activity. Employees are made aware of the relevance and importance of their activities and how they can contribute to achieve quality objective. Training records are kept and are controlled in procedure TRN-14.

### **6.3 Infrastructure:**

Our infrastructure provides the foundation for operations. We identify, provide and maintain the infrastructure needed including workspace, utilities, equipment, software, hardware, tools, transport carts, and communication services.

### **6.4 Work Environment:**

Environmental elements like temperature, noise, lighting, humidity, cleanliness, pollution, and airflow effect work performance. These human and physical factors can influence personal motivation, satisfaction and performance. PNC identifies and manages these factors to achieve conformity of the product.

## 7.0 PRODUCT REALIZATION:

### 7.1 Planning of Product Realization:

To ensure product realization, PNC considers process steps, process flow, desired outputs, control measures, training, equipment, materials, information and other materials. Quality plans define needed processes, documentation, specific resources and facilities. Records are identified to provide confidence in process conformity and the resulting product. All standard operating procedures are listed in Section 9. All individual record forms required are listed in each individual procedure.

### 7.2 Customer Related Processes:

**7.2.1 Customer Requirements:** In many cases, a customer has specific requirements as noted on the drawings, customer's quality manual or noted on purchase orders. Customer requirements are identified including product specification, delivery schedule, documentation and industry and regulatory requirements.

**7.2.2 Review of Customer Requirements:** Customer requirements along with PNC's ability to meet these requirements are defined and reviewed before accepting the purchase order. If customer has not provided documented statement of requirements, the customer requirements are confirmed before acceptance of the order. Any change in purchase order is also reviewed same way. The results of requirement reviews and subsequent follow-up actions are recorded. See procedure CTR-04.

**7.2.3 Customer Communication:** PNC follows a defined process to communicate with customers regarding products, inquiries, purchase orders; customer feed back, and complaints.

### 7.3 Design and Development:

For manufacture of PC boards and SMT stencils, the customer provides necessary drawings, specifications and artworks. This way all the products are made using customer supplied designs. PNC does not design or develop its own product. For these reasons this section does not apply to PNC.

### 7.4 Purchasing:

#### 7.4.1 Purchasing Control:

PNC's purchasing processes are controlled to ensure purchased product conforms to specified requirements. The type and extent of control applied to our suppliers is dependent on the possible effect of the purchased product on the subsequent realization processes and their outputs. PNC evaluates and selects suppliers based on their ability to supply product to PNC's requirements. PNC uses defined criteria for supplier selection, evaluation and assessments. A list of agreed upon suppliers is maintained. A record of supplier evaluation is also maintained.

**7.4.2 Purchasing Information:** Our purchasing documents describe the product to be purchased. Where appropriate the purchase orders specify all Quality System Requirements.

**7.4.3 Verification of the purchased product:** PNC's policy is to reduce the amount of incoming inspection to a minimum by ensuring that the source of supply is capable of providing a product that conforms to requirements. On most of the products, PNC relies on vendor's certificate of conformance. Generic products and other goods that by their nature cannot be other than visually checked and counted may go directly to their designated storage area.

Goods that are rejected during in-process are returned to the receiving area and segregated. The vendor is informed for proper disposition. Purchasing activities are carried out to documented procedure PUR-01.

#### **7.5 Production And Service Provision:**

PNC identifies requirements for operation that realize products and deliver services. To meet these needs PNC reviews its capacity, training programs, process flows, yield analysis, monitoring, communication and other activities affecting the operation.

**7.5.1 Control of Production and Service Provision:** Production and service operations are controlled as applicable through:

7.5.1.1 Availability of information on product requirements.

7.5.1.2 Access to work instructions, as necessary.

7.5.1.3 Use of available equipment for operation

7.5.1.4 Availability and use of measuring and monitoring devices.

7.5.1.5 Implementation and monitoring and measuring activities.

7.5.1.6 Use of defined processes for release, delivery and post-delivery activities.

All work is done to documented quality plans, procedures and work instructions, where necessary. The known variables during processes are monitored and minimized. Specifications are used to define acceptance criteria for most procedures, and final products.

**7.5.2 Validation of Processes for Production and Service Provision:** PNC's end product is measured and monitored prior to release for shipping. PNC makes sure that the final product meets all the specifications. PNC does not require validation of processes for production and hence this section is not applicable to PNC's Quality System.

**7.5.3 Identification and traceability:** Products are identified throughout production by means of a traveler. The product status, inspection and monitoring records, the lot numbers of raw materials used, and yields are recorded. All the parts released for shipment are identified by serial numbers, if required. A log is maintained for all the serial numbers assigned. Documented procedures define where identification and traceability are required. This activity is controlled by procedure PIT-06.

**7.5.4 Customer Property:** PNC's customers provide drawings, specifications, artworks, components and other miscellaneous items for PNC's use or to incorporate in final product. PNC identifies, verifies, protects and maintains customer's property while it is under PNC's control. If any item is lost or, damaged or otherwise unsuitable for use, it is recorded, and reported to the customer.

**7.5.5 Preservation of the Products:** The conformity of the product to the customer requirements is preserved during internal processing and final delivery to the customer. The product preservation includes identification, storage and protection. This includes raw materials used for final products. Procedures are available to cover storage, handling, packaging, and shipping. These procedures are supplemented by contract requirements as necessary. See procedure PP-29.

#### **7.6 Control of Monitoring and Measuring Devices:**

PNC uses monitoring and measuring devices to validate product conformity. Control of monitoring and measuring devices is carried out per documented procedure CAL-10.

7.6.1 PNC identifies Monitoring and measuring requirements for assuring the conformity of the product to the specified requirements. Monitoring and measuring devices are used and

controlled to ensure the measurement capability is consistent with the measurement requirements.

- 7.6.2 All monitoring and measuring devices are listed in Calibration Logs. This log lists the accuracy required, frequency of the calibration and status of each device.
- 7.6.3 On specified intervals, all measuring and monitoring devices are calibrated against measurement standards traceable to NIST. When there is no such standard exist, the basis used for calibration or verification is recorded.
- 7.6.4 All measuring and monitoring devices are safe guarded for adjustments that would invalidate the measurement result. They are also protected from damage and deterioration during handling, maintenance and storage.
- 7.6.5 The results of device calibration are recorded. If the device is found out of calibration, the validity of previous results is assessed and appropriate corrective actions are taken.

## 8.0 MEASUREMENT, ANALYSIS AND IMPROVEMENT:

PNC monitors, measures and evaluate its products, processes and customer satisfaction at the appropriate intervals. The resulting data is analyzed to improve the performance of our quality management system.

### 8.1 General:

PNC's monitoring and measuring activities are planned and implemented to ensure conformity and achieve improvement. PNC determines the need for and use of applicable methodologies including statistical techniques.

### 8.2 Monitoring and Measurement:

#### 8.2.1 Customer Satisfaction:

Information on customer satisfaction or dissatisfaction is monitored as one of the measurements of PNC's Quality Management System. Defined methods are followed to obtain and use this information.

#### 8.2.2 Internal Audit:

Periodic internal audits are conducted to verify the quality management system has been effectively implemented and maintained, as well as, to conform to ISO 9001:2000 and MIL-PRF-31032A, 31032/1B, and 31032/2A Performance Specifications requirements. The audit program considers the status and importance of the activities to be audited as well as results of the prior audits. The plan includes scope, frequency and methods. PNC makes sure that audits ensure objectivity and impartiality. No auditor is allowed to audit his/her own work. All nonconformity found during an audit is reported to the responsible supervisor. The auditor and the supervisor will agree on time required to remedy the nonconformity. The auditor is responsible for follow up to verify effectiveness of the remedial actions taken. This activity is controlled by documented procedure INT-08 (See section 9).

#### 8.2.3 Monitoring and Measurement of Processes:

PNC applies suitable methods for monitoring and measuring the realization processes necessary to meet customer requirements. These methods conform the continuing ability of each process to achieve the planned results. When planned results are not achieved, corrective and action are taken as appropriate to ensure conformity of the product.

#### 8.2.4 Monitoring and Measurement of the Product:

Product characteristics are monitored and measured to verify product requirements are met. The monitoring and measurement activities are carried out at the appropriate stages

of product realization process in accordance with planned arrangements. PNC maintains the evidence of conformity with the acceptance criteria. Records indicate the person that authorizes release of the product. Product release does not proceed until all the specified activities have been satisfactorily completed, unless approved by a relevant authority or the customer. All rework, scrap and problems are recorded on the travelers. Appropriate records for in-process and final tests are maintained.

### **8.3 Control of nonconforming product:**

Nonconforming product is identified and controlled to prevent its unintended use or delivery. Goods received from suppliers and found to be nonconforming are also segregated in designated areas. Product found in-process to not conform are tracked back to identify the source of the problem. The items that fail test criteria are also taken back and causes for failure identified.

Disposition can only be decided by Quality Manager or his designee. All nonconformities are recorded and trends analyzed by Quality Manager.

When nonconforming product is corrected it is subject to re-verification to demonstrate conformity to the requirements. Records are maintained for rework, concession or scrap. When the nonconforming product is detected after the delivery or customer has started using it, PNC takes appropriate actions considering the potential effects of the nonconformity. Nonconformities are recorded and analyzed to determine trends, consider improvements and provide input to management reviews.

This activity is controlled by documented procedures NCP-03.

### **8.4 Analysis of Data:**

PNC collects and analyzes data from quality records to determine suitability and effectiveness of the quality system. The analysis includes data from monitoring and measuring devices and other relevant sources. The data is analyzed to provide information on customer satisfaction, conformity to customer requirements, characteristics and trends of processes and products including opportunities for preventive actions and performance of suppliers.

### **8.5 Improvement:**

**8.5.1 Continued Improvement:** PNC continually seeks to improve the effectiveness of Quality Management System through the use of the Quality Policy, quality objectives, audit results, data analysis, corrective and preventive actions and management reviews.

**8.5.2 Corrective Actions:** PNC takes immediate actions to eliminate the cause of nonconformities in order to prevent recurrence.

Corrective actions process includes identifying nonconformities, evaluating need for action to avoid recurrence, implementing the necessary corrective action, recording the results of corrective actions and reviewing the effectiveness of corrective actions taken.

**8.5.3 Preventive Action:**

Preventive actions are identified to eliminate causes for potential nonconformities. Potential problem impacts are considered in determining the appropriate actions.

A documented procedure CAP-09 is established and includes identifying potential nonconformities, evaluating need for action to prevent occurrence of nonconformity, implementing needed preventive action, recording the results of these actions and reviewing the effectiveness of these actions.

## 9.0 Index of Standard Operating Procedures (SOP):

Department	SOP	Procedure
Administration	TRN-14	Training
Purchasing	PUR-01	Purchasing
Sales & Marketing	CTR-04	Contract Review
Quality	DOC-05	Documents Control
	INT-08	Internal Audits
	CAP-09	Corrective & Preventive Actions
	CAL-10	Calibration
	ET-AOI-13	Electrical Testing & AOI
	INSP-15	Inspection
Engineering	MET-11	Methods Engineering
	FLM-12	Film-Making
Manufacturing	IRM-02	Incoming Raw Materials
	NCP-03	Control Of Nonconforming Product
	PIT-06	Product Identification & Traceability
	PREV-07	Preventive Maintenance
	BLOX-16	Black Oxide
	MLB-17	Multi-Layer Lamination
	FAB-18	Fabrication
	DRL-19	Drilling
	LPI-20	Liquid Photo Imageable (LPI) Solder Mask
	GLD-21	Gold Plating
	FF-22	Final Finishes
	PTH-23	Electroless Copper Plating
	ELP-24	Electro- Plating
	IMAGE-25	Imaging
	STP-26	Plating Resist & Tin Stripping
	ETCH-27	Etching
	CHSC-28	Character Screening
	PP-29	Product Preservation
SMTLS-30	SMT Laser Cut Stencil	
LAB-31	Laboratory Analysis	

**9.0 REVISION LOG**

REVISION	DATE	DESCRIPTION OF CHANGES	APPROVALS
0	4-16-98	Original Release	
1	1-7-99	Reformatted all pages. Changed sequence of level 2 manuals.	
2	12-3-99	Numbered Level 2 manuals	
3	12-13-99	Statement of verification not required. Defined retention time & location	
4	12-28-01	Rewritten entire document to comply with requirements of ISO9001:2000 standards.	
5	9-19-05	Incorporated the provisions of standards MIL-PRF-31032A, 31032/1B, and 31032/2A Performance Specifications	
6	11-10-08	Revised Organization Chart in paragraph 2.	