



# QUALITY SYSTEMS MANUAL

## ISO 9001:2008

**CONTROLLED DOCUMENT**  
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### 1.0 INTRODUCTION TO THE COMPANY

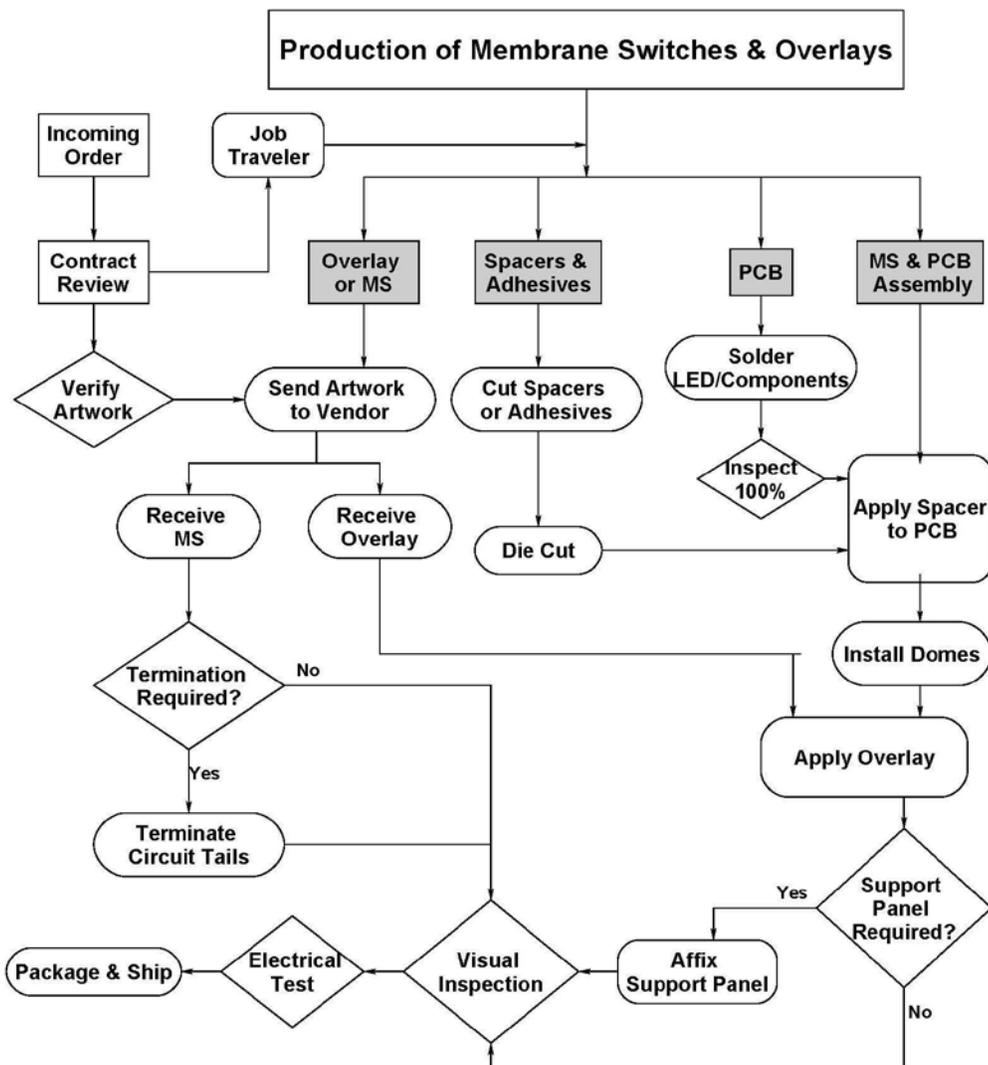
Reliance Electronics, Inc. (Reliance) has been located in, New Jersey under current management since 1998. This is the only Reliance manufacturing site.

Reliance provides contract-manufacturing services to Electronics industry. Its core business is to assemble Printed Circuit Boards and to manufacture Graphic Overlays and Membrane Switches.

The following flow charts depict the basic steps of manufacturing of Graphic Overlays & Membrane Switches and Assembly of Printed Circuit Boards.

#### 1.1 Flow Chart for Manufacturing Membrane Switches & Graphic Overlays.

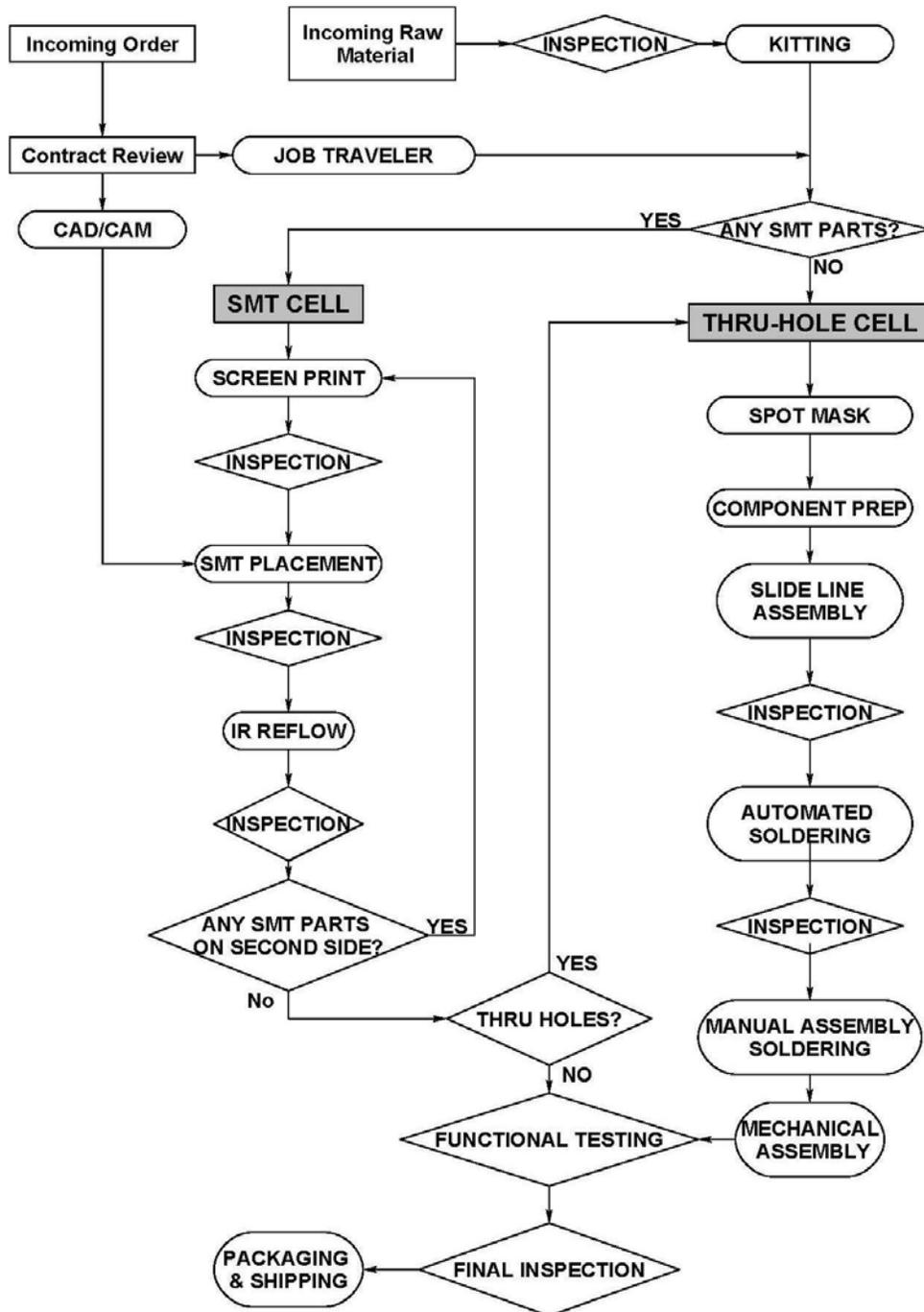
### Reliance Manufacturing Process Flow Diagram



1.2 Flow Chart for Assembly of Printed Circuit Boards:

**Reliance Manufacturing Process Flow Diagram**

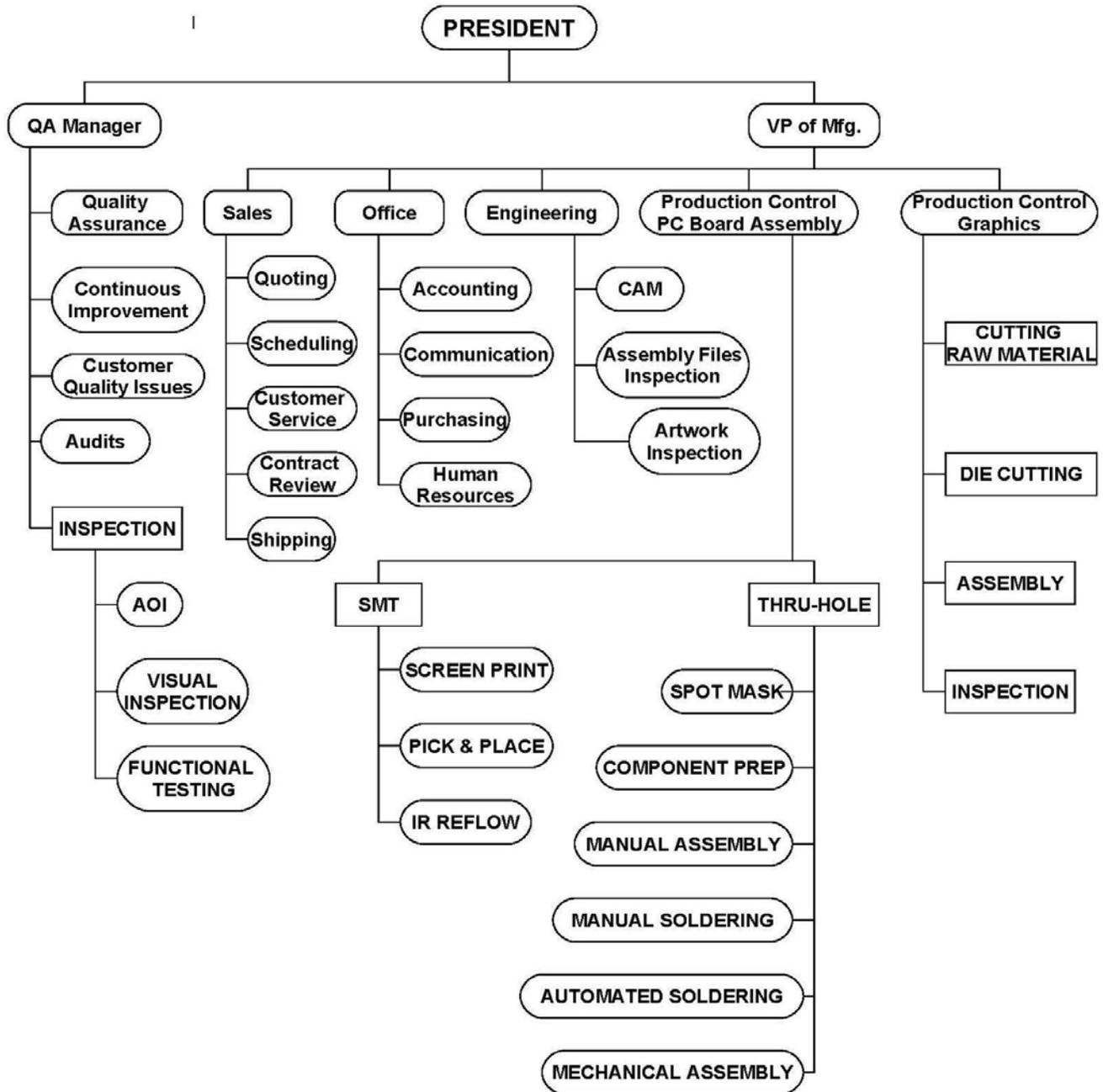
**PC Board Assembly**



**2.0 ORGANIZATION CHART:**

Following Organization Chart reflects the current organization structure of Reliance.

*Reliance Organization Chart*



### **3.0 SCOPE:**

#### **3.1 General:**

This manual is divided into sections corresponding to the Quality Management Systems requirements of standards ISO 9001:2008.

This manual specifies requirements for Quality Management System where Reliance demonstrates its ability to provide consistent product that meets customer and applicable statutory and regulatory requirements. It also addresses enhanced customer satisfaction through effective application of the system including process for continual improvement and the prevention of nonconformity.

**3.2 Exclusion:** Reliance excludes Product Design, Development and Product Service from its processes. See section **7.3** and **7.5**.

### **4.0 QUALITY MANAGEMENT SYSTEM:**

#### **4.1 General Requirements:**

Reliance recognizes that leading a successful operation requires to be managed in a systematic and visible manner. As a result Reliance has established documented, implemented and maintains a Quality Management System.

Reliance has determined 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.

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

Reliance's quality management system is managed in accordance with the requirements of the ISO 9001:2008 standards. Any process that is outsourced that affects product conformity to requirements is defined and controlled through purchasing process as described in document PUR-01.

#### **4.2 Documentation Requirements:**

##### **4.2.1 General:**

Reliance's quality management system includes the provisions of standards ISO 9001:2008 and other documents and records determined by Reliance to be necessary to ensure the effective operation and control of the processes. Reliance'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. Reliance reviews contractual requirements, applicable standards and relevant regulations to ensure the necessary documentation is in place.

Reliance ensures that all personnel have access to and are aware of the QMS documentation. Customer and/or regulatory authorities' representative will have access to the documentation as needed.

#### **4.2.2 Quality Manual:**

This Quality Manual is a statement by Reliance that its quality management system is compliant with ISO 9001:2008. Any exclusion is explained with justification in the product realization section of this manual. The quality manual includes references to documented procedures that are necessary to support the QMS and are related to requirements of ISO 9001:2008. The scope of Reliance's quality management is manufacturing of Membrane Switches & Graphic Overlays and to assemble Printed Circuit Boards.

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".

#### **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 superceded 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 determined by the Reliance to be necessary for the planning and operation of the management system 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 Quality Office and other is kept on designated location on production floor. This production floor copy is available to every production employee for reference. Only Quality Manager authorizes amendments to these procedures.

Document changes shall be coordinated with customers and/or regulatory authorities in accordance with contract or regulatory authorities. Controlled standards include American National Standards, IPC Standards, and International Standards. They are kept in 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 established to provide evidence of conformity to requirements and of the effective operation of the quality management system are controlled.

Reliance has established a documented procedure 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. This procedure also defines the method for controlling records that are created by and/or retained by the suppliers.

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

Reliance assures that all records remain legible, identifiable and retrievable. Access to quality records will be made available to customers and regulatory authorities when a contractual agreement exists or there is a regulatory requirement.

#### **4.3 Configuration Management:**

Reliance's products are conceptually simple with "Configuration" being that combination of customer provided specifications and broadly accepted reference standards to which a given product is produced. Since Reliance does not have design responsibility, configuration management application is limited. Reliance's primary function in configuration management is to provide traceability from supplier to the customer and from the customer to the supplier. Where specific revisions are required by the contract, the revision is flowed to all necessary elements in the organization and the suppliers. Procedure MEPC-12 describes in detail how Reliance manages Revision Controls.

### **5.0 MANAGEMENT RESPONSIBILITY:**

#### **5.1 Management Commitment:**

We demonstrate our 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.

#### **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:**

Reliance is a service company and its main objective is to satisfy customer requirements. Reliance 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. Reliance'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.

**5.4 Planning:****5.4.1 Quality Objectives:**

Every year Reliance sets goals for first pass yield and on time delivery. In order to make every employee familiar with these set goals, they are posted on the bulletin board. 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 Management System Planning:**

Reliance 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. Reliance ensures that integrity of the quality management system is maintained 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 Organization Chart on section 2.0 of this manual. Specific responsibilities are defined in quality plans, and individual procedures listed in section 9.0 of this manual.

**5.5.2 Management Representative:**

The President of Reliance Electronics, INC. shall appoint one of the Reliance's employees as a Management Representative, who, irrespective of his/her other responsibilities, shall have the authority for ensuring the requirements of standards ISO9001:2008 are implemented and maintained at Reliance. 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. He has complete freedom to make all final decisions to resolve matters pertaining to quality.

In the absence of the Quality Manager, President of Reliance assumes 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:**

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

**5.6 Management Review:****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 Input:**

Following topics are covered in management reviews.

5.6.2.1 Internal and external audit results.

5.6.2.2 Customer complaints, comments and satisfaction requirements.

5.6.2.3 Process performance and product conformity.

5.6.2.4 Status of preventive and corrective actions.

5.6.2.5 Follow up actions from earlier management reviews.

5.6.2.6 Results of change in processes.

5.6.2.7 Recommendations for improvement.

5.6.2.8 Financial effects of quality activities.

#### **5.6.3 Review Output:**

Management review output includes decisions made and action assignments with target completion dates 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 the quality management system and to enhance customer satisfaction by meeting customer requirements. Based on periodic 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. Reliance ensures that persons performing work affecting conformity to product requirements are competent on the basis of education, training, skill and experience.

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

We identify the competence needed for each process and assess the qualification needed for employee performing the activity. Proper training is provided to achieve the necessary competence and 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, communication and information systems.

**6.4 Work Environment:**

Environmental elements like temperature, noise, lighting, humidity, cleanliness, pollution, and airflow effect work performance. These elements along with electro static discharges effect conformity of the product. These human and physical factors can influence personal motivation, satisfaction and performance. Reliance 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, Reliance considers process steps, process flow, desired outputs, control measures, training, equipment, materials, information and other materials. Quality plans define needed processes and documents. Reliance also provides resources specific to the product. 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.

A job traveler is prepared for every product specifying all steps of the processes, inspection required at various steps and equipment and other resources needed to support and maintain the product.

**7.2 Customer Related Processes:**

**7.2.1 Determination of Requirements Related to the Product:** 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, and documentation requirements. In many cases Reliance considers necessary certain requirements due to specific unique use of the product or due to statutory or regulatory requirements or national and industry standards.

**7.2.2 Review of Requirements Related to the Product:** Prior to accepting an order Reliance reviews the requirements related to the product and its ability to meet these requirements. In case, the customer has not supplied any requirements, requirements of standard industry practice are followed. Any risk due to new technology, short lead-time and any other factor that may affect Reliance's ability to fulfill the contract are also evaluated. 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:** Reliance follows a defined process to communicate with customers regarding products, inquiries, purchase orders; customer feed backs, and complaints.

**7.3 Design and Development:**

For assembly of PC boards, the customer provides necessary assembly drawings and assembly instructions. For manufacturing Overlays and Membrane Switches the customer provides necessary artwork, drawings and instructions. This way all the products are made

using customer supplied designs. Reliance does not design or develop its own product. For these reasons this section does not apply to Reliance.

#### **7.4 Purchasing:**

##### **7.4.1 Purchasing Process:**

Reliance'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. Reliance evaluates and selects suppliers based on their ability to supply product to Reliance's requirements. Reliance uses defined criteria for supplier selection, evaluation and assessments.

7.4.1.1 Since Reliance is responsible to its customer for quality of the product delivered, Reliance is also responsible for the quality of all the products purchased from suppliers including customer-designated sources.

7.4.1.2 Reliance maintains a list of approved suppliers that includes the scope of the approval.

7.4.1.3 A record of initial supplier evaluation and periodic reviews of supplier performance is maintained. The records of these reviews are used to determine level of control required on supplier.

7.4.1.4 A point system is used to determine necessary actions required when dealing with a supplier that does not meet requirements.

7.4.1.5 If any customer requires any special process, and the process is performed by Reliance, it will be clearly specified on Reliance Job Traveler. If the supplier uses the process, it will be clearly specified on the Purchase Order.

7.4.1.6 Only Quality Manager has the authority to approve as well disapprove any supplier.

**7.4.2 Purchasing Information:** Our purchasing documents describe the product to be purchased. A form with Purchase Order Standard Terms and Conditions is attached to every Purchase Order.

Where appropriate the purchase orders specify:

7.4.2.1 All Quality System Requirements including procedures, processes, equipment and personnel.

7.4.2.2 The name or other positive identification, applicable issues of the specifications, drawings, process requirements, inspection requirements, and any other relevant technical, data.

7.4.2.3 Requirements for design, test, examination, inspection and related instructions for the acceptance by Reliance.

7.4.2.4 Reliance does not accept any nonconforming material or any material with change in process or product from any supplier.

7.4.2.5 Reliance reserves the right to review product and applicable records at supplier's site.

7.4.2.6 Reliance recognizes the right of regulatory authorities and Reliance's customers for access of supplier facilities and applicable records.

7.4.2.7 If the supplier uses sub-tier supplier for any product, the sub-tier supplier is required to meet all the obligations of the supplier as noted in above paragraphs 7.4.2.1 to 7.4.2.6.

**7.4.3 Verification of the purchased product:** Reliance's policy is to reduce the amount of incoming inspection to a minimum, if possible to a **ZERO**, by ensuring that the source of supply is capable of providing a product that conforms to requirements.

7.4.3.1 On most of the products, Reliance relies on vendor's certificate of conformance and/or test reports. Test reports, if there are any, are verified for correct specifications. All other visual characteristics are verified prior to acceptance. A record is maintained for suppliers which are required to send Certificate of Conformance and/or test records. Periodically Reliance performs random validations of test reports from the suppliers.

7.4.3.2 Generic products and other goods that by their nature cannot be other than visually checked and counted are checked accordingly and sent directly to their designated storage area.

7.4.3.3 Reliance reserves the right to review product and applicable records at supplier's site. If so, Reliance will specify that requirement in the purchase order.

7.4.3.4 Reliance recognizes the right of regulatory authorities and Reliance's customers for access of supplier facilities and applicable records. If that is required, supplier will be properly notified. Verification by the customers absolves Reliance of nothing and Reliance cannot use the customer's verification as proof of our quality.

7.4.3.5 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:**

Reliance does not provide any service to any customer for any product. Hence the Service Provision does not apply to Reliance. Reliance identifies requirements for operation that realize products. To meet these needs Reliance 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:**

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. Production operations are controlled as applicable through:

- a. Availability of information on product requirements.
- b. Access to work instructions, as necessary.

- c. Use of available suitable equipment for operation
  - d. Availability and use of monitoring and measuring equipment.
  - e. Implementation of monitoring and measurement.
  - f. Use of defined processes for product release, delivery and post-delivery activities.
  - g. Accountability for all products during manufacturing. All split orders are labeled as different Lots and non-conforming products are documented on job travelers.
  - h. As evidence that all manufacturing and inspection operations are completed, the operators and inspectors signs traveler and/or inspection forms at completion of the each process as appropriate.
  - i. All manufacturing personnel are trained to prevent, identify and remove all unidentified product from work areas. Special areas with proper signs are designated for collecting these unidentified products.
  - j. Utilities and supplies that effect product quality are monitored.
  - k. Workmanship standards are clearly defined in individual procedures. If required, work instructions and/or marked up drawings and/or pictures of the products are provided to help understand requirements on any specific product.
- 7.5.1.1 **Production Documentation:** All production activities are based on travelers, customer supplied drawings, flow charts, and if applicable, special instructions. A list is provided in the traveler for applicable automatic machine placement programs, special tools needed and for programs for programmable microchips.
- 7.5.1.2 **Control of Production Process Changes:** Production Manager is authorized to make changes in production processes. If necessary, he/she is required to obtain approval from the customer or regulatory authorities. All process changes must be documented for future use and reference. QA Manger is required to assess the effect of process changes on the quality of the product.
- 7.5.1.3 **Control of Production Equipment, Tools, and NC machine programs:** Production equipment, tools and programs shall be validated prior to use and maintained and inspected periodically according to documented procedures. Reliance specifies, wherever applicable, first Article inspection to assure that article is according to design data/specification. All tools and equipment are checked periodically for condition check and where applicable for preventive maintenance. This activity is controlled in procedure PREV-07.
- 7.5.1.4 Reliance does not transfer any work to any facility, even for temporary period and hence does not require any process or procedure for this situation.
- 7.5.1.5 **Control of Service Operation: Reliance does not provide any service to any customer for any product. Hence this clause does not apply to Reliance.**

**7.5.2 Validation of Processes for Production and Service Provision:** Reliance's end product is measured and monitored prior to release for shipping. Reliance makes sure that the final product meets all the specification. Reliance does not require validation of processes for production and hence this section is not applicable to Reliance'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 throughout product realization. All the parts released for shipment are identified by serial numbers. 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:** Reliance's customers provide drawings, specifications, artworks, components and other miscellaneous items for Reliance's use or to incorporate in final product. Reliance identifies, verifies, protects and maintains customer's property while it is under Reliance's control. If any item is lost or, damaged or otherwise unsuitable for use, Reliance reports this to the customer and maintains the records. Control of Customer supplied material is controlled by documented procedures IMT-02.

**7.5.5 Preservation of the Product:** Reliance preserves the product during internal processing and final delivery to the customer in order to maintain conformity to the customer requirements. The product preservation includes, as applicable, identification, storage, cleaning, special handling of ESD sensitive parts, safety labels, protection from foreign objects and protection during in process operations and delivery. This includes raw materials used for final products. Procedure PP-11 covers storage, handling, packaging, and shipping. This procedure is supplemented by contract requirements as necessary.

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

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

**7.6.1** Reliance identifies monitoring and measuring requirements for assuring the conformity of the product to the specified requirements. Monitoring and measuring equipment are used and controlled to ensure the measurement capability is consistent with the measurement requirements.

**7.6.2** All monitoring and measuring equipment are listed in Calibration Logs. This log lists the equipment identification number, its location, frequency of the calibration, method of calibration and accuracy required for acceptance.

**7.6.3** Monitoring and measuring equipment include all measuring tools, test hardware and software, automated inspection equipment, indicator gauges on production equipment, customer supplied equipment used for production and master gauges used for calibration of other measuring equipment. Reliance does not use any personally owned measuring tools or equipment.

**7.6.4** Reliance ensures that a suitable environmental condition is maintained for the calibration, inspections, measurements and tests being carried out.

- 7.6.5** On specified intervals, all measuring and monitoring equipment are calibrated or verified or both against measurement standards traceable to NIST. When there is no such standard exist, the basis used for calibration or verification is recorded.
- 7.6.6** All measuring and monitoring equipment are safe guarded for adjustments that would invalidate the measurement result. They are also protected from damage and deterioration during handling, maintenance, storage and environmental conditions.
- 7.6.7** The results of equipment calibration or verification are recorded and maintained. All equipment has identification in order to determine its calibration status.
- 7.6.8** If the equipment is found out of calibration, the validity of previous results is assessed and appropriate corrective actions are taken. If the equipment needs recall, it is done as per documented procedure CAL-10.
- 7.6.9** If any equipment is recalled, Reliance takes appropriate actions to assess the effect on quality on in-process, final and delivered product verified by the defective equipment.

## **8.0 Measurements, Analysis and Improvement:**

Reliance monitors, measures and evaluates 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:**

Reliance's monitoring and measuring activities are planned and implemented to ensure and demonstrate conformity to product requirements and achieve improvement. Reliance 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 Reliance's Quality Management System. Customer Surveys are used to obtain and use this information as per Procedure CTR-04.

#### **8.2.2 Internal Audit:**

Periodic internal audits are conducted to verify the quality management system has been effectively implemented and maintained, to conform to ISO 9001:2008 requirements and also to meet contractual and regulatory 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. Reliance 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 the time required to remedy the nonconformity. The supervisor responsible for the area being audited shall ensure that any necessary corrections and corrective actions are taken without any undue delay to eliminate detected nonconformities and their causes. The auditor is responsible for follow up to verify the effectiveness of the remedial actions taken.

Auditors use appropriate special audit forms developed for each process area. They are also encouraged to audit any relevant criteria not mentioned in the forms. A documented procedure AUD-08 is established to define the responsibility and requirements for planning and conducting audits, establishing records and reporting the results.

### **8.2.3 Monitoring and Measurement of Processes:**

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

In the event nonconformity is found in the process, appropriate actions are taken to correct the non-conforming process and the resulting product is evaluated for any nonconformity. All non-conformed products are segregated, evaluated and disposed off per procedure NCP-03.

### **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.

Any special requirements on any product specified by Reliance, the customer or any industry standard will be monitored and controlled.

Reliance does not use sampling as an acceptance criteria for the product. All the products are released for shipping after 100% inspection only. Reliance maintains the evidence of conformity with the acceptance criteria. All rework, scrap and problems are recorded on the travelers. The release of product to the customer does not proceed until all the specified activities have been satisfactorily completed, unless approved by a relevant authority or the customer. Appropriate records for in-process and final tests are maintained. Records indicate the person that authorizes release of the product for delivery to the customer.

**8.2.4.1 Inspection Documentation:** Processes that require inspection are identified in proper sequence in Job Travelers for Electronics and Graphics products. Reliance uses industry standard IPC-610 or customer specified standards, if provided, as acceptance criteria. Inspection forms specify inspection characteristics to look for and if needed, measuring tool to use. All test records will show actual data and will also show that the product has met required acceptance criteria.

**8.2.4.2 First Article Inspection:** Reliance does not validate any product with first article run. Rather it uses first article run for certain individual processes to set up the equipment. No formal records of this activity are needed and are not maintained. The inspector simply signs off the traveler as evidence that first article was approved after necessary adjustment of the equipment.

### 8.3 Control of nonconforming product:

Nonconforming product is identified and controlled to prevent its unintended use or delivery. Nonconforming product found in-process is tracked back to identify the source of the problem. The items that fail test criteria are also taken back and causes for failure identified. Goods received from suppliers and found to be nonconforming and the products rejected and returned by the customers are segregated in designated areas.

Nonconforming products are reworked or scrapped or sent to customer to use as is with customer's permission.

Disposition can only be made by Quality Manager or his designee. All nonconformities are recorded and trends analyzed by Quality Manager. Prior to scrapping, all nonconforming products are marked with a large X with permanent ink and then discarded in scrap bin. Scrap bins are periodically emptied in dumpster.

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, Reliance takes appropriate actions considering the potential effects of the nonconformity. The customer is duly notified in writing in detail the nature of nonconformity. The customer will decide whether to use the product as is, to scrap or to return to Reliance for rework. Nonconformities are recorded and analyzed to determine trends, consider improvements and provide input to top management reviews.

A documented procedure NCP-03 is established to define the controls and related responsibilities and authorities for dealing with nonconforming product.

### 8.4 Analysis of Data:

Reliance determines collects and analyze data from processes and quality records to determine suitability and effectiveness of 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 Continual Improvement:** Reliance 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 Action:** Reliance takes immediate actions to eliminate the causes 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.

When it is determined that supplier is responsible for nonconformity, the supplier is properly notified by issuing a Supplier Corrective Action in writing and is required to submit corrective actions to prevent reoccurrence.

Reliance takes appropriate effective actions if any corrective action is not completed in timely manner. Procedure CAP-09 controls corrective actions.

**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	Document & Data Control
	AUD-08	Internal Quality Audits
	CAP-09	Corrective & Preventive Actions
	CAL-10	Calibration
	INSP-18	Inspection
Engineering	MEPC-12	Methods Engineering & Production Control
Manufacturing	IMT-02	Incoming Materials
	NCP-03	Nonconforming Products
	PIT-06	Product Identification & Traceability
	PREV-07	Preventive Maintenance
	PP-11	Product Preservation
	ESD-13	ESD Management
	SMT-15	SMT Assembly
	THA-16	Thru Hole Assembly
	MSW-17	Membrane Switches

**10.0 REVISION LOG:**

REVISION	DATE	DESCRIPTION OF CHANGES	APPROVALS
0	4-11-00	Original Release	
1	10-10-01	Rewritten entire document to comply with requirements of ISO9001: 2000 standards.	
2	2-20-04	Reformatted entire document to incorporate requirements of standards AS 9100, Rev B.	
3	7-12-04	Corrected various inconsistencies in referencing various Quality Systems documents.	
4	9-28-07	Revised paragraph 5.4.1	
5	4-1-09	Revised to comply with requirements of ISO9001:2008 standards. Revised Index of Standard Operating Procedures listed in section 9.	
6	7-22-09	Changed company name to Reliance.	
7	1-2-12	Revised Flow Chart for Manufacturing Membrane Switches & Graphic Overlays, Flow Chart for PCB assemblies and Organization Chart and Index of Standard Operating Procedures	