

UNCONTROLLED COPY FOR PUBLIC RELEASE



**APOLLO
DISPLAY
TECHNOLOGIES**

The LCD Specialists

QUALITY

MANUAL & POLICIES

**Apollo Display Technologies, LLC
85 Remington Blvd., Ronkonkoma, NY 11779
Phone (631) 580-4360 Fax (631) 580-4370 Email: sales@apolloDisplays.com
Web: www.apolloDisplays.com**



Change History:				
Rev From	Rev to	By	Date	Comments:
NA	A	AF	08-11-05	Initial Release to Revision "A"
A	B	AF	10-31-05	Reference DCN# 04 & 05, DCN-04 adds Julian Dade code, DCN-05 adds RoHS to MATF form and Specification Alert to the "Product Identification & Traceability" section.
B	C	AF	3-9-2006	Update per DCN#9 page # 4&5 Management structure and DCN#10 Wire splicing procedure Para #7.
C	D	AF	6-9-06	<u>Update per DCN# 14</u> , addition of glue process to SBC connectors
D	E	AF	6-20-06	<u>Update packing procedure per DCN# 17</u>

UNCONTROLLED COPY FOR PUBLIC RELEASE

NOTES: _____

INDEX PAGE

A. Management Structure

- 1. General Statement & Company Policy*
- 2. Quality Assurance (QA) Personnel & Reporting Structure*
- 3. Quality Assurance Responsibilities*
- 4. Quality Planning*
- 5. Drawing & Change Control*
- 6. Procured Material Control & Inspection*
- 7. Calibration*
- 8. Non-Conforming Material: In Process, Final Test & Customer Returns*
- 9. Process Controls*
- 10. Final Test*
- 11. Environmental & Safety*
- 12. Quality Improvement Program*
- 13. Internal Quality Audits Scheduling*
- 14. Process Flow Chart*

PROCEDURES



MANAGEMENT STRUCTURE

- Managing Directors:** Richard McKay and Terrence Kaliner **Title:** Managing Director
Reports To: Board of Members
- Quality Assurance:** Andrew Frey Sr. **Title:** QA Manager
Reports To: Richard McKay **Title:** Managing Director
- Value-Added Mfg:** Brian Selnick **Title:** Value Added Manager
Reports To: Richard McKay **Title:** Managing Director
- Production Manager:** Kathy Huaman **Title:** Production Manager
Reports To: Richard McKay **Title:** Managing Director
- Engineering Director:** William Crawford **Title:** Director of Engineering
Reports To: Richard McKay **Title:** Managing Director
- National Sales Manager:** Ken Chojnacki **Title:** National Sales Manager
Reports to: Richard McKay **Title:** Managing Director

Company Information

Employees:

Total No.: 30 Quality: 2 Manufacturing: 10 Other: 20

Year founded: 1989

Core of Business:

LCD Display enhancements and distribution, LCD Controller supplier and enhancements, Single Board Computer modifications (SBC), and Specialized Kits.

Specifications and Quality Procedures are based on:

Military Specifications: Mil-Q-9858 Mil-I-45208 ISO-9001-2000 IPC-A-610

Signature: Andrew Frey Sr. Name: Andrew Frey Sr.
Title: Quality Assurance Manager Date: August 2005

Apollo Display Technologies, LLC
85 Remington Blvd., Ronkonkoma, NY 11779
Phone (631) 580-4360 Fax (631) 580-4370 Email: sales@apollodisplays.com
Web: www.apollodisplays.com



1. General Statement & Company Policy

- 1.1. Quality is essential to the success and future of Apollo Displays & Apollo’s customers.
- 1.2. Quality can *never* be compromised. Despite “rush” delivery requests, low profit margins, material cost pressures, human resource problems, etc.; quality must be the first priority.

2. Quality Assurance (QA) Personnel & Reporting Structure

- 2.1 Displays: Quality Assurance Manager, Display & Value-Added Operations
- 2.2 QA Responsibility: Records for New Designs, Changes, Instruction, VA Material Incoming Inspection, Test Equipment, NCM, Process Controls (Procedures) and Material Approval Prior to Shipment.
- 2.3 Reviews: Quarterly ~ 1/1, 4/1, 7/1 and 10/1; QA and Managing Director; others as required.
- 2.4 All quality issues are reported directly to: Richard McKay.
- 2.5 An agenda is kept with QA and is always accessible for constant additions of topics to be brought up at the next scheduled meeting by the Managing Director or QA.
- 2.6 Minutes will be recorded, logged, and stored with the QA for each meeting held.

3. Quality Assurance Responsibilities

- 3.1 Apollo must have and make available to sales, engineering and production management an up-to-date & annually reviewed QA Manual & Policies consistent with the Quality System Requirements of the Company.
- 3.2 It is the responsibility of the QA personnel
 - ✚ To implement QA policies
 - ✚ To keep all management aware of QA policies
 - ✚ To train production and test personnel to all aspects of QA

4. Quality Planning

- 4.1 Design Procedure: Initiated by sales with engineering input from both Apollo and customer. Technical support implements sample production with sales responsible for customer approval. Customer sample approval is required in writing unless the value-added procedure only requires connector or cable attachment. However, any changes to the connectors or cables must have customer approval.
- 4.2 QA must review all new designs and insure the completeness of and inspection sequence of drawings, specifications and manufacturing and test procedure that must be in place in *writing* for every sample, first article and production order. All written documentation must be checked by QA, dated and filed in the specific customer file and/or part number file.

5. Drawing & Change Control

- 5.1 It is the responsibility of QA to insure that all *changes* to drawings, specifications, manufacturing and test procedures are detailed in writing, dated and filed accordingly. [This applies to both customer driven issues and any procedural changes at Apollo.] Every page of documentation must be marked with the appropriate part number change and/or date applicable.
- 5.2 All preliminary, uncontrolled and obsolete procedures, drawings and specifications must be marked accordingly and dated so to when the change occurred.
- 5.3 All controlled drawings and documents will receive a revision number and logged. Any changes will require a revision change, approval if necessary and the revision log updated by QA using the *Document & Data Control* form.
- 5.4 Customer approval of all changes which will affect the product specifications must have prior approval from the affected customer(s) and be filed accordingly. The effectively date of change approval must be noted in the appropriate file(s).
- 5.5 Any old material in stock or in-process that had been affected by the change must be dated and segregated from new material.

6. Procured Material Control & Inspection

- 6.1 Purchase Orders must be placed with approved suppliers unless a waiver is received from QA.
- 6.2 Purchase Orders for custom devices must be reviewed by QA.
- 6.3 Receiving Inspection:
 - ✚ Inspect condition of incoming packaging
 - ✚ Inspect of supplier packaging
 - ✚ Inspect visually to note any material damaged during shipment
 - ✚ Verification of matching part numbers on material, packing list and order
 - ✚ Checking custom material to specification and drawings.
 - ✚ All material with a limited shelf-life is to be marked with the received date.

Only those materials that are approved at receiving inspection may be put into the stockroom. QA will periodically audit the receiving procedures and stockroom material to insure all material must be marked with correct part number and date code and receiving approval. Material must be stored in facilities designed to prevent damage.

7. Calibration

- 7.1 All test and production equipment must be inspected for proper functioning by qualified personnel or contract resources.
- 7.2 All Test and production / inspection equipment sent for calibration to a contract resource are NIST traceable.

8. Non-Conforming Material: In Process, Final Test & Customer Returns

- 8.1 Non-conforming material must be diverted to a control area and reviewed by QA. Customer returned NCM documentation must be kept in the [RMA](#) master file. Documentation should include:

- ✚ Material part number and lot code

- + Date NCM identified
- + Specific details related to material condition and cause

Supplier caused NCM documentation will be saved in the form of supplier RMA and Corrective Action Reports.

- 8.2 A Material Review Board (MRB) will decide the final disposition of NCM. The MRB will consist of QA, Sales, and engineering representatives (and Company President, if required). The MRB will establish whether the material is repairable and the testing required verifying compliance to drawings and specifications. In this case records must be kept and all material that passes re-test and QA approval will be identified for traceability on the material itself or by lot documentation filed in the customer or part number file.
- 8.3 Reporting *and* implementing a plan for Corrective Action is an absolute requirement for MRB Disposition of NCM caused by Apollo or any of its suppliers. Formal, written documentation must be given to all suppliers suspected of supplying NCM. Written response from the supplier is required, including corrective action reports.

9. Process Controls

- 9.1 Process controls must include methods for tracing and segregating potential NCM.
- 9.2 All procedures and changes to procedures must be written down and explained in detail to each production worker. The documentation must be available at the specific workstation (or work area) during the time the material is in process.
- 9.3 It is the responsibility of QA to insure that the written process procedures are followed and to insure that all subcontractors' process is approved to Apollo's standards.

10. Final Test

QA or their delegated representative must approve material prior to shipment. Refer to written "Inspection and Test Procedures".

11. Environmental & Safety

Environmental and Safety considerations must be studied by QA for every new procedure and new VA material procured to be used in production.

12. Quality Improvement Program

- 12.1 Evaluate technical & commercial position in market. Technical survey of available products through internet research & industry publications. Commercial survey through data available from OEM manufacturers.
- 12.2 Quality awareness, active employee involvement in quality and improvements in efficiency to be achieved by encouraging employees to submit all ideas to their respective managers and/or the Quality Assurance manager. Engineering to actively pursue new methods for reduce production time & necessary steps to complete a project/product.
- 12.3 Purchasing is to standardize on components whenever possible to reduce material costs. Keep records of projects & results.



13. Internal Quality Audits Scheduling

- 13.1 Apollo will conduct a Quality Audits every month.
- 13.2 The QA Supervisor or designated QA associate will give the audit to at least one of the production staff.
- 13.3 Once a member of the production staff has been selected by random, he or she will not be selected again until all of the production staff has been selected.
- 13.4 The audit will consist of several procedures selected from random from all of Apollo's manuals to make sure they are being followed properly.
- 13.5 Safety and ESD procedures will always be included in all audits. All of the selected production staff member's paperwork will be checked for the latest revision.
- 13.6 All results and corrective actions will be kept in the QA supervisor's log.

