

REV.	DESCRIPTION	DATE
-	DOCUMENT RELEASE EFFECTIVITY	8 NOV, 2013
A	UPDATE PER REVISION PAGE	1 May, 2014
B	UPDATE PER REVISION PAGE	31 May, 2018
C	UPDATE PER REVISION PAGE	27 FEB. 2020

QUALITY ASSURANCE INSPECTION PROCEDURE FOR Counterfeit Product Prevention Policy QAIP-42

PREPARED BY: John Harper

REVIEWED BY: Jeff Heller

APPROVALS

TITLE	SIGNATURE	DATE
Quality Control Manager	<i>John Harper</i>	2/27/2020
Operations Manager	<i>Jeff Heller</i>	2/27/2020
Purchasing	<i>Barbra Crowding</i>	2/27/2020

--

COLUMBIA RESEARCH LABS, INC.	
---	--

COLUMBIA CAGE CODE 07571	DOCUMENT NO. Q.A.I.P. 42 Rev. C
---	--

DOCUMENT NO. Q.A.I.P. 42 Rev. C	PAGE 1 OF 8
--	--------------------

REVISIONS

A	1 May 2014	ADDED REVISION PAGE AND PARAGRAPH 9 TRAINING
B	31May 2018	Added Caution Note to Paragraph 6B – Page 5, Updated Training Requirements Paragraph 9 – Page 7, Added DFARS 252.246.7007 To Associated Documents Paragraph 10 – Page 8
C	27 FEB, 2020	Updated Paragraph 1.0 and 2.0 for clarification. Added NISTIR 7622 - Notional Supply Chain Risk Management Practices for Federal Information Systems to paragraph 5 Added G: Mechanical Parts (*Materials*) Verification to paragraph 7. Added DFARS 252.246.7008 and NISTIR 7622 - Notional Supply Chain Risk Management Practices for Federal Information Systems to Associated Documents Paragraph 10, Page 8.

1.PURPOSE

To protect Columbia Research Laboratories, Inc. (CRL), our supply chain, and ultimately our customers from the infiltration of counterfeit or questionable pedigree **Electrical, Electronic and Electromechanical (EEE) Parts and Materials** into our end products.

2.SCOPE

This policy applies to all **Electrical, Electronic and Electromechanical (EEE) Parts and Materials** (raw materials, hardware, fasteners, bearings, castings, epoxies, paints, etc.) (herein collectively referred to as parts) delivered to CRL, either in assemblies or as individual parts.

CRL suppliers are required to purchase from OCM, OEM, or authorized distributors for such OCM/OEM, as sole and exclusive sources for all parts to be delivered to CRL and to obtain and retain written records for such. Suppliers shall secure a C of C and/or C of CT for all parts to provide to CRL upon request and maintain on file as described within applicable CRL purchase orders and in compliance with AS9100 and/or ISO9001 requirements.

The use of Non-Authorized Suppliers/Brokers without express written consent by CRL is Hereby strictly prohibited.

Note: See paragraph 6 for Process for Use of Non-Authorized Suppliers/Brokers.

3.BACKGROUND

Numerous customers are requiring CRL and our suppliers to implement a counterfeit parts policy with their suppliers and sub-tier suppliers.

4.DEFINITIONS

OCM - Original Component Manufacturers

OEM - Original Equipment Manufacturers

C of C - Certification of Conformance or Certificate of Compliance

C of CT-Certificates of Conformance and acquisition traceability

Authorized/Franchised distributors - Distributors with which OCM/OEM have contractual agreements identifying them as "Authorized" or in a like manner to buy, stock, re-package, sell, and distribute their product lines.

Non-Authorized Suppliers/Brokers– A Non-Authorized/Franchised distributors, Independent distributors or any organization other than an OCM, OEM or their Authorized/Franchised distributors.

5. SUPPLIER RESPONSIBILITY

All suppliers are required to take the following actions:

1. Implement and enforce a written Counterfeit Parts Prevention and Control Plan designed to preclude, detect, and remove any counterfeit parts from all deliveries to CRL.

As an integral part of this plan, the supplier shall maintain a database of counterfeit parts received and applicable source data.

2. CRL requires that suppliers review AS5553 and other published or unpublished standards (See "Associated Documents"), for counterfeit parts avoidance, detection, migration and disposition, as best practice review and confirm internal procedures are appropriate and effective.

3. CRL requires that suppliers review NISTIR 7622 - Notional Supply Chain Risk Management (SCRM) Practices for Federal Information Systems to implement supply chain risk management considerations into procurement of systems, products, and services to reduce the risk of counterfeit parts entering the supply chain.

4. Actively cooperate with CRL in the implementation of this policy to eliminate counterfeit parts from all products.

5. Ensure this policy and the expected actions are communicated to quality and business leaders throughout your company and your suppliers and their sub-tiers.

6. USE OF NON-AUTHORIZED SUPPLIERS/BROKERS

The use of Non-Authorized Suppliers/Brokers without express written consent by CRL is hereby strictly prohibited. Should business reasons (obsolescence, cost, lead time, customer commitments, etc.) dictate the use of such suppliers, the following process is required:

1. Supplier shall notify in writing the Purchasing Representative at CRL of a requirement to utilize a non-authorized source.

2. Supplier shall provide specific details regarding the suggested source, the known details on component pedigree, date code, and use of this suggested verification/test plan for component Verification.

- 2a. Electronic parts not available through an OCM, OEM or authorized distributors for such OCM/OEM may be procured from a Broker without C of CT only after CRL approval and Component authenticity verification per Component Verification section And Testing/Analysis Table.
- Broker shall have an active counterfeit part detection program. CRL may review relevant databases (ERAI, GIDEP) to evaluate broker's history of supplying counterfeit parts prior to approval.
 - Suppliers shall notify the appropriate CRL buyer to request Design activity for component replacement or circuit board re-design.

3. Supplier shall provide all details in writing on a supplier request form document which includes a customer sign off and approval section.
4. CRL shall review the supplier request and will either approve, reject, or return with comments of requested changes including but not limited to additional or alternative verification requirements. Visual inspection, part marking inspection, and C of C inspection shall be included as critical verification steps in all such instances.
5. Should CRL provide approval, the supplier shall provide Certification of Conformance, verification documentation, and any test results promptly to CRL.
6. Supplier is not approved to deliver parts to CRL until signed approval is provided and certification of conformance and test results are provided and confirmed to be compliant to the details agreed upon in the approved supplier request form.

7. COMPONENT / MATERIALS VERIFICATION

All inspection and testing shall be performed to the original manufacturer's specifications and Parameters Steps A, B, C, D, E, F and G should be performed in order. If a nonconformance is found, stop testing, reject the lot, and notify the CRL buyer. Testing shall only be performed by test house pre-approved by CRL Supplier Quality Engineer.

A: Visual Inspection

Each lot to be delivered shall be subjected to a visual inspection at an AQL of 1.0 or tighter with a 40x minimum magnification. 100% of the remaining lot shall be visually inspected without Magnification Visual inspection shall include but is not limited to: verifying lot/date codes against Manufacturer's database, correct English spelling, manufacturer's logo, evidence of component Remarking, damaged bent leads, chip-outs, scratches, cracks, terminal finish inconsistent with Manufacturer's specification for that part number, any discrepancies to the pin one indicating area, And inconsistencies between the upper and lower mold of the component.

B: Authenticity Verification

Each lot to be delivered shall be subjected to an inspection at an AQL of 1.0 or tighter. Testing shall include verification of the component's physical attributes to the original manufacturer's drawing, **Swabbing and other applicable testing to verify authenticity. Swabbing shall be performed to The Current revision of MIL-STD-883 testing method 2015 using acetone and the alcohol and Mineral Spirits solution.**

CAUTION: For all solvents specified in these tests, ensure proper safety precautions are Used, including proper Personal Protective Equipment, a ventilated fume hood and eliminate any ignition sources.

C: X-ray Inspection

Each lot to be delivered shall be subjected to an inspection at an AQL of 1.0 or tighter. X-ray Inspection shall include checking for the presence of the die, cracks in the epoxy, checking wire Bonds, product or manufacturing markings that are X-ray detectable and any mixed die Configurations within the same lot/date code.

D: Electrical Testing

Electrical testing of each lot to be delivered shall be completed at an AQL of 1.0 or tighter. Testing shall include verifying electrical specifications from the original manufacturer's technical data sheets as approved by CRL. Testing must be performed at thermal temperatures as identified on the OEM/OCM specification.

E: Destructive Physical Analysis

Each lot to be delivered shall be subjected to a DPA inspection of 2% to a maximum of 30 units per Lot code. Inspection shall include verification of authenticity of the die and any other internal features that may be shown on the original manufacturer's technical data.

F: Plating Inspection

Each lot shall be verified for lead finish per manufacturer's specification using appropriate methodology such as X-Ray Fluorescence.

G: Mechanical Parts (*Materials*) Verification

All visual inspection, mechanical testing and authenticity verification shall be performed to the original manufacturer's specifications and parameters. If a nonconformance is found, stop testing, reject the lot, and notify the CRL buyer. Inspection and mechanical testing shall only be performed by test house pre-approved by CRL Supplier Quality Engineer.

** Materials are defined as the following: Raw materials, hardware, fasteners, bearings, castings, epoxies, paints, etc.*

Note: The above sections A thru F may be repeated by CRL Receiving and Inspection for component and materials verification.

Testing/Analysis Requirements Table-by Component Type

Component Type	Plating Inspection (F)	Visual Inspection (A)	Authenticity Verification (B)	X-ray Inspection (C)	Electrical Testing (D)	Destructive Physical Analysis (DPA) (E)
Capacitors	X	X			X	
Connectors	X	X	X			
Crystals	X	X	X	X	X	X
Diodes	X	X			X	
Fuses	X	X			X	
Heat sinks		X	X			
IC	X	X	X	X	X	X
Inductors	X	X	X		X	
LED	X	X			X	
Mechanical parts		X	X			
Potentiometer	X	X			X	
Relays	X	X	X		X	
Resistors	X	X			X	
Speakers		X			X	
Switches		X	X			
Transformers	X	X	X		X	
Transistors	X	X			X	

8. DISPOSITION AND REPORTING OF COUNTERFEIT PARTS

Disposition and Segregation

Nonconforming parts shall be disposition and segregated per this document. Confirmed counterfeit Parts shall be prevented from re-entering the supply chain. Reporting all occurrences of counterfeit parts Shall be documented and reported, as appropriate, through CRL Purchasing and when possible to External Organizations such as: (ERAI, GIDEP law enforcement agencies). Membership and reporting Through ERAI (ELECTRONICS RETAILERS ASSOCIATION INTERNATIONAL) and /or GIDEP (GOVERNMENT - INDUSTRY DATA EXCHANGE PROGRAM) organizations is strongly Encouraged.

Find ERAI web site at: <http://www.era1.com/>

Find GIDEP web site at: <http://www.gidep.org/>

Find

Liability

Suppliers shall be held liable for any counterfeit parts entering CRL supply chain up to and including all costs incurred by CRL resulting from the counterfeit parts.

9. INTERPRETATION

The CRL Quality Management or Purchasing Representative can be contacted for further interpretation or clarification of this policy.

10. SUPPORTING DOCUMENTS

Documentation (supporting quality records) retention is subject to all ISO 9001, AS9100 or CRL specific requirements, whichever is greater.

11. TRAINING

Appropriate personnel in Purchasing, Incoming Receiving, Engineering and Production Departments shall be trained in the requirements of this procedure.

12. ASSOCIATED DOCUMENTS

Columbia's Reference Documents as Amended:

CRL Quality Systems Manual - (Conforms to ISO 9001 and AS9100)

CRL DRP-10-108 Procedure - (Receiving Inspection Procedure)

CRL Quality Control Procedure QC-10 - (Purchasing and Supplier Control)

CRL Form 111 - (Terms and Conditions of Purchase)

CRL AS9100 Processes and Procedures – (Purchasing Process 3.0 and Purchasing Procedure 8.4)

**Government Requirements or Industrial Standards Reference Documents
(Published or Unpublished) as Amended:**

AS5553 - Counterfeit Electronic Parts; Avoidance, Detection, Mitigation and Disposition

AS6081 - Fraudulent/Counterfeit Electronic Parts: Avoidance, Detection, Mitigation, and Disposition – Distributors Counterfeit Electronic Parts; Avoidance Protocol, Distributors

AS6174 - Counterfeit Material; Assuring Acquisition of Authentic and Conforming Material

AS9100 - Aerospace Quality Management Standard

AS9120 - Quality Management Standard; Requirements for Aviation's, Space and Defense Distributors

ARD6884 - Terms and Definition; Fraudulent/Counterfeit Electronic Parts

ARP6178 - Fraudulent/Counterfeit Electronic Parts; Tools for Risk Assessment of Distributors

DFARS 252.246-7007 - Defense Acquisition Regulations System, DoD, Contractor Counterfeit Electronic Part Detection and Avoidance System

DFARS 252.246-7008 - Defense Acquisition Regulations System, DoD, Sources of Electronic Parts

ISO9001 - Quality Management Standard

NISTIR 7622 - Notional Supply Chain Risk Management Practices for Federal Information Systems