

1.0 Purpose

1.1 The purpose of this document is to provide guidelines to avoid risks associated with counterfeit electronic parts entering into the company's supply stream and to maintain the highest quality product for our customers.

1.1.1 This work instruction establishes counterfeit parts risk mitigation methods to enable:

- a) Maximizing the availability of authentic parts,
- b) Procuring parts from reliable sources,
- c) Avoiding, mitigating the risks associated with procuring parts from independent distributors,
- d) Assuring authenticity and conformance of procured electronic parts,
- e) Controlling parts identified as counterfeit and,
- f) Reporting and taking corrective action when counterfeit parts are detected.

2.0 Responsibilities

2.1 Pinnacle Authorized Buyers are responsible for purchasing and ensuring the quality of electronic parts.

2.2 Management will be responsible for maintaining quality suppliers and purchasing reliable electronic parts in order to avoid, detect and mitigate the risk of counterfeit electronic parts.

2.3 Management is responsible for disposition of counterfeit electronic parts.

3.0 Definitions

3.1 **Counterfeit Part-** An electronic part that is a copy or substitute; or a part whose material, performance or characteristics are knowingly misrepresented by a supplier in the supply chain.

3.2 **Electronic Component-**An electronic component is a basic electronic element usually packaged with two or more connecting leads or metallic pads. Components are intended to be connected together usually by soldering to a printed circuit board, to create an electronic circuit with a particular function.

3.3 **Electronics Resellers Association International (ERAI)-**An international information services organization that monitors, investigates and reports electronic issues in the supply chain.

3.4 **Government-Industry Data Exchange Program (GIDEP)-**A Government and Industry program to promote the cooperative exchange of technical information.

3.5 **Independent Distributors of Electronics Association (IDEA)-**A non-profit

trade association representing quality and ethically oriented independent distributors of electronic components. The purpose of IDEA is to promote quality electronic products through quality certification, education and other methods designed to help independent distributors.

- 3.6 **Original Equipment Manufacturer (OEM) or Original Component Manufacturer (OCM)**-The entity that originally made the part.
- 3.7 **Authorized Distributor**-A distributor, reseller or aftermarket supplier who is franchised or authorized by the Original Equipment Manufacturer. Authorized Distributors may also be known as Franchised Distributors.
- 3.8 **Independent Distributor**-A distributor that does not typically have limiting contractual agreements or obligations with Original Equipment Manufacturers.

4.0 Equipment/Software

- 4.1 None

5.0 Instruction

- 5.1 Counterfeit electronic parts avoidance and detection begins prior to the purchasing of electronic parts.
 - 5.1.1 During design and development, engineers are responsible to select electronic components for the intended application with a primary consideration being given to select components that have a sufficient product life-cycle remaining in support of production and customer demands
 - 5.1.2 Management or other assigned staff will survey and approve suppliers in accordance with Purchasing Procedure (P-740):
 - a) When approving electronics distributors, preferential consideration is given to approved OEMs and Authorized/Franchised Distributors. This ensures that parts have original manufacturer warranty provisions; product integrity via proper handling, storage and shipping; failure analysis and corrective action support; traceability via Certificates of Conformance; and acquisition traceability.
 - b) When using Independent Distributors, staff will assess the electronic distributor by reviewing quality procedures, certifications, evaluation of parts performance history, sample parts inspection and/or investigating through organizations such as GIDEP, ERAI or IDEA.
 - c) When surveying any electronics distributor, staff will look for memberships; quality certifications; performance history; Quality Management Systems in place and/or Counterfeit Risk Mitigation Plan.
- 5.2 Electronic parts will be purchased using the Approved Suppliers List (F-740-003)

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- and in accordance with the Purchasing Procedure (P-740). Purchases will be made only by Authorized Buyers.
- 5.2.1 When a part(s) is purchased from an OEM or Authorized/Franchised OEM Distributor, then a Certificate of Conformance is sufficient to document origin.
 - 5.2.2 If the purchased part(s) is not being supplied by the OEM or Authorized OEM Distributor, then a full manufacturing certification report must be available upon request for each shipment to validate the pedigree and traceability data shall be available upon request showing a clear path back to the OEM.
 - 5.2.3 Failure to be able to trace the part(s) back to the OEM is grounds to reject the part(s).
 - 5.2.4 Management will perform periodic evaluations of suppliers to assure on going quality. The following may be reviewed:
 - a) Part(s) are meeting specifications.
 - b) On time delivery.
 - c) Order correctness.
 - d) Quality of parts.
 - e) Competitive pricing.
- 5.3 When electronic part(s) are received by the company, the receiving staff will follow Receiving and Inspection Work Instructions (WI-740-001).
- 5.3.1 A visual inspection will occur upon receipt of electronic part(s). Electronics will be checked for possible signs of counterfeit:
 - a) Parts which do not contain the proper construction consistent with the ordered part.
 - b) Misspellings on the manufacturers' labels.
 - c) Parts which have different package style than the ordered parts.
 - d) Parts marking condition is faded, non-distinct or modified in some way.
 - e) Date codes that are not possible or in the future.
 - f) Parts that have modified labeling or markings.
 - 5.3.2 The order will be checked against the packing list and/or invoice to ensure the order is correct.
 - 5.3.3 When electronic part(s) pass visual inspection, they will be delivered safely to the department that placed the order.
 - 5.3.4 The department staff may run further tests to ensure that the electronic part(s) function as needed for the designated product.
 - 5.3.5 All original purchasing documents, including Certificate of Conformance and traceability data will be kept by receiving staff. Packing list and

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invoice will be given to the Office Manager.

- 5.3.6 A corrective action will be initiated if the electronic parts are found to be counterfeit.
- 5.4 Electronics and Software Division Engineers will maintain inspection and test procedures in such a manner that will maximize the potential for detecting counterfeit electronic parts and thereby minimizing the potential risk of counterfeit electronic parts from entering our customers' supply stream.
 - 5.4.1 During production, staff handling electronic parts will be vigilant and report any noted anomalous or suspect part conditions or product by using the corrective action process.
 - a) Staff will handle suspect counterfeit part(s) or suspect product in accordance with Control of Nonconforming Product Procedure (P-830).
 - b) Staff will ensure that the suspect product or parts are Red labeled according to Control of Nonconforming Product Procedure (P-830) and secured to prevent them from re-entering the supply stream. Corrective and Preventive Action Request will be given to management to determine course of action.
- 5.5 If Management receives a corrective action request that identifies a counterfeit electronic part(s), it will be processed in accordance with the Corrective Action Procedure(P-852):
 - 5.5.1 Management will agree upon an action to dispose of the counterfeit electronic part(s). This may include:
 - a) Returning material to the supplier and requesting evidence of disposition to prevent re-entry into the supply steam.
 - b) Destruction of the material by Pinnacle Technology, Inc. to render it unusable in any form preventing re-entry into the supply stream.
 - 5.5.2 Management will contact the supplier regarding the counterfeit electronic part(s) discovery. A Supplier Corrective Action form will be completed.
 - 5.5.3 Management will remove the supplier from the Approved Suppliers List (F-740-003).
 - 5.5.4 If an electronic part is determined counterfeit, management will review all products that may contain the counterfeit part(s) and take action to correct the product.
 - 5.5.5 Management will report counterfeit sources to the appropriate organizations (ERAI, GIDAP, and IDEA).
- 5.6 Table 1-Risk Assessment Tool provides a baseline to assist in assessing risk associated with scenarios throughout the purchasing, receiving and production process.

Table 1. Risk Assessment Tool.

Risk Level		Individual Discrete Scenarios										
		OCM/OEM & Ind Dist Test Data Available?	OCM/OEM CofC Available?	Part Marking Condition (Visual Insp)	Part "Newness" Condition (Visual Insp)	Ind Dist CP Incidents?	Part No. CP Incidents?	Ind Dist Incidents for P/N?	Ind Dist IDEA / ERAL Member?	Part Criticality	Part Availability	Part Price
High	High	N/A	N/A	Incorrect/ Not Resistance to Solvents	Gross Degradation / Evidence of Installation	N/A	N/A	Yes	N/A	High	Low	High
Medium	High	N/A	No	Correct But Well-Faded/ Suspect	Moderate Degradation (e.g. Leads Well Bent) / Suspect	Yes	Yes	No	Moderately High	Moderately Low	Moderately High	
Medium	Moderate	N/A	Yes	Correct But Semi-Faded/ Semi- Suspect	Slight Degradation (e.g. Leads Slightly Bent)				Moderate	Moderate	Moderate	
Medium	Low	No	Yes	Correct & Slightly Nondistinct	Like New (e.g. commensurate w/typical handling)				Moderately Low	Moderately High	Moderately Low	
Low	Low	N/A	N/A	Correct & Distinct	New (e.g. no degradation)	No	No	Yes	Low	High	Low	

Purpose & Instructions To provide a relative baseline regarding the levels of perceived risk associated with various individual discrete scenarios that may be encountered. Each individual scenario that may be encountered is along the x-axis of the top of the table. Enter the table based on the scenario encountered and go down until you reach the "condition" associated with each, one should be able to gauge the level of risk for that procurement to facilitate determining a commensurate level of risk countermeasures to attempt to minimize the overall risk to an acceptable tolerable level based upon the set of circumstances and constraints present. Of course, the goal is to achieve a "low" risk level for each scenario, however, this is not always possible.

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6.0 Forms and Records

- 6.1 F-740-002 Supplier Corrective Action Request
- 6.2 F-852-001 Corrective and Preventive Action Request (CPAR)
- 6.3 F-740-003 Approved Supplier List

7.0 Associated Documents

- 7.1 P-740 Purchasing
- 7.2 P-852 Corrective Action Procedure
- 7.3 P-830 Control of Nonconforming Product
- 7.4 WI-740-001 Receiving and Inspection

8.0 Revisions

Revision	Date	Section	Paragraph	Summary of change	Authorized by
A	10/15/2013			Initial issue	Donna Johnson