Counterfeit Electronic Parts Detection and Avoidance System

1. PURPOSE

1.1. Content

The purpose of this document is to describe the process and due diligence performed to prevent the purchase and / or use of Counterfeit Electronic Parts and meet the requirements of DFARS 252.246-7007and AS5553 - Counterfeit Electronic Parts, Avoidance, Detection, Mitigation, and Disposition Application.

1.2. Application

This specification applies to the Aerospace, Defense and Marine Business Unit. Supporting specifications and/or procedures may be developed, however, such supporting documentation shall not conflict with or supersede this specification.

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2. SCOPE

This document applies to the procurement activities at TE Connectivity to the extent specified herein. This document shall not be applicable to TE's procurement activities unless such activity is (i) subject to the Cost Accounting Standards under 41 U.S.C. chapter 14, as implemented in regulations found at 48 CFR 9903.201-1, or (ii) such requirements are flowed down and accepted by TE by a contractor to the U.S. Government.

3. APPLICABLE DOCUMENTS AND FORMS

The following documents constitute a part of this specification to the extent specified herein. Unless otherwise indicated, the latest edition of the document applies.

3.1. Industry Standards

- DFARS 252.246-7007 requirements
- SEC.818. Detection and Avoidance of Counterfeit Electronics Parts, National Defense
- AS5553 Counterfeit Electronic Parts, Avoidance, Detection, Mitigation, and Disposition
- AS6081 Fraudulent / Counterfeit Electronic Parts: Avoidance, Detection, Mitigation, and Distribution – Distributors Counterfeit Electronics Parts
- AS 9100 Quality Management System Requirements – Aerospace

3.2. Documents

TEC-1037	Document Control, TE Global Corporate Quality Specifications
102-19	Control of Nonconforming Material

4. DEFINITIONS

4.1. Counterfeit Electronic Part

An unlawful or unauthorized reproduction, substitution, or alteration that has been knowingly mismarked, misidentified, or otherwise misrepresented to be an authentic, unmodified electronic part from the original manufacturer, or a source with the express written authority of the original manufacturer or current design activity, including an authorized aftermarket manufacturer. Unlawful or unauthorized substitution includes used electronic parts represented as new, or the false indication of grade, serial number, lot number, date code, or performance characteristics.

4.2. Suspected Counterfeit Part

An electronic part for which credible evidence (including but not limited to visual inspection or testing) provides reasonable doubt that the electronic part is not authentic.*(as defined in DFARS 202.101*

4.3. Electronic Part

An integrated circuit, a discrete electronic component (including but not limited to transistors, capacitors, resistors, or diodes), or a circuit assembly. The term "electronic part" includes any embedded software or firmware.

4.4. Related Definitions

Aftermarket Manufacturer – A manufacturer meeting one or more of the following criteria:

1. The manufacturer is authorized by the OCM to produce and sell replacement parts, usually due to an OCM decision to discontinue production of a part. Parts produced are from dice that have been: transferred from the OCM manufacturer to the aftermarket manufacturer or produced by the aftermarket manufacturer using the OCM tooling or intellectual property (IP).
2. The manufacturer produces semi-conductor parts using dice or wafers manufactured by and traceable to an OCM, that have been properly stored until use and are subsequently assembled, tested, and qualified using processes that meet technical specifications without violating the OCM's intellectual property rights, patents, and copyrights.

3. The manufacturer produces parts through emulation, reverse engineering, or redesign that matches the OCM specification and satisfies Customer needs without violating the OCM intellectual property rights (IPR), patents, or copyrights.

Approved Supplier – Suppliers who are formally assessed and determined to have a low risk of providing counterfeit electronic parts.

Authorized Supplier – Aftermarket manufacturers authorized by the OCM or OCM authorized sources of supply for a specific part.

Broker – In the independent distribution market, brokers are professionally referred to as an Independent Distributor.

Certificate of Conformance (C of C) – A document provided by the supplier formally declaring the purchase order requirements are met. The document may include information related to the manufacturer, distributor, quantity, date code, inspection date that is signed by a responsible associate for the supplier.

Certificate of Conformance and Traceability (C of CT) – A certificate of conformance applicable to some military specifications requiring documented traceability of the product from the Qualified Parts List / Qualified Materials manufacturer through the product delivery to the Government.

Certificate of Test Conformance (C of TC) – A document provided by the seller or a test laboratory capable of performing such tests, showing documented results of testing performed, required to meet the electrical requirements listed in the test specification document. The results of such tests shall be documented and provided upon request, and shall include test information relative to the manufacturer, distributor, quantity, date code, inspection date.

Government Industry Data Exchange Program (GIDEP) – A cooperative activity between the Government and industry participants seeking to reduce or eliminate resource expenses by sharing technical information essential for research, design, development, production, and operational phases of the life cycle of the system, facility, or equipment.

Obsolete electronic part – means an electronic part that is no longer in production by the original manufacturer or an aftermarket manufacturer that has been provided express written authorization from the current design activity or original manufacturer.

Original Component Manufacturer (OCM) – Company that designs and manufactures an electronic part and holds the intellectual property for the original part design.

Packaging – Component packaging refers to the manner the electronic parts are packaged in preparation for use. There are four basic types of packaging: (A) Bulk, (B) Tray, (C) Tube, and (D) Reel

Refinishing – Using a plating process method after manufacture to alter the original plating composition on a parts lead or lead wire.

Refurbished – Subjecting parts to a process to brighten, polish, or renovate the item in an effort to restore the item to a “like new” condition. Refurbished parts may have the leads realigned and tinned.

Trusted Supplier - Use of suppliers that are the original manufacturer, sources with the express written authority of the original manufacturer or current design activity, including an aftermarket manufacturer authorized by the OCM or suppliers that obtain parts exclusively from one or more of these sources

Uprated – Assessment resulting in an extension of a parts rating to meet performance requirements for an application where the part is used outside the specification range of the manufacturer.

Up screened – Additional part testing performed to produce parts verified beyond the specification parameters of the manufacturer.

5. RESPONSIBILITY

5.1. Training of Personnel:

[Addresses DFARS 252.246-7007 requirements]

TE shall train employees in awareness, avoidance, detection, mitigation, and disposition of suspect counterfeit EEE parts, if relevant to the organization role and/or function

This specification is valid for the TE Connectivity Aerospace, Defense and Marine Business Units (ADM). The requirements of this procedure shall be flowed down contractually to our ADM supply base for those applicable suppliers of electronic parts in accordance with TE Connectivity procedures.

Sourcing, engineering, supply chain, and other associates as appropriate or required are responsible for complying with the requirements and processes identified in this document.

A. Sourcing responsible to procure the correct electronic part using the applicable drawing, specification, description, or other information to meet the intended use.

B. Quality associates are responsible for examining, inspecting, maintaining the parts to identify or mitigate the receipt and / or use of counterfeit electronic parts.

C. Purchasing is responsible to reference and / or attach the following statement to each purchase order. “Seller shall not deliver any Products to Buyer that do not meet the requirements of this procedure which may be amended from time to time”.

6. PROCEDURE / PROCESS DESCRIPTION

6.1. Process to Abolish Counterfeit Electronic Parts Proliferation:

[Addresses DFARS 252.246-7007 requirements]

Engineering and Procurement should maximize the availability of authentic, original, qualified parts. The control should extend through the life cycle up to obsolescence. Planning, design, and Buyer / Planner should assess the availability of original or authentic products in support of manufacturing. To reduce the risk associated with counterfeit electronic parts lifetime buys, multiple supply sources, and part substitutions may be considered.

6.2. Selection, Evaluation, and Approval of Suppliers:

- Procure EEE parts directly from an authorized source, or exclusive suppliers when the EEE parts are still being manufactured available in stock from such sources

  Note: If the manufacturer of an EEE part considers the part to be in production, then procurement of a EEE part from a supplier other than authorized sources or exclusive suppliers may require customer approval

- Maintain objective evidence that the EEE parts supplier is an authorized source or an exclusive supplier

- If an exclusive supplier is utilized, the organization shall review, audit, and/or evaluate the supplier to determine that parts are obtained directly from authorized sources and segregated from other parts.

- Evaluate, select, and monitor suppliers using sources of counterfeiting information to avoid the purchase or use of suspect counterfeit or counterfeit EEE parts

- Require a documented risk assessment and risk mitigation process, by the organization with technical responsibility, for procurement from other than (1) authorized sources; or (2) exclusive suppliers.

  1. The risk assessment needs to address

     - The likelihood of receiving a suspect counterfeit or counterfeit EEE part from the source

     - The consequences of a suspect counterfeit EEE part being installed (e.g. human safety, mission success, additional cost)

2. The risk mitigation process shall document inspections and/or tests that are utilized commensurate with the risk including acceptance and reject criteria. Test, inspections, and other risk mitigation methods must be performance in accordance with accepted customer and industry standards (AS6171, AS6081, CCAP-101, IDEA-STD-1010

6.3. Purchasing Information and Verification

To minimize the risk of being provided suspect counterfeit or counterfeit EEE parts. This includes

A. Flow down of applicable counterfeit avoidance and detection requirements to applicable contractors and their supply chain

B. Flow down a requirement for authorized distributors to disclose if they are not authorized for the EEE parts they are supplying

C. Flow down a requirement for exclusive supplies to disclose if they cannot supply EEE parts they acquire directly from authorized sources

D. Verification – ensure the supplier section 6.2 has been follow for risk mitigation

6.4. Investigation

In case of suspect counterfeit and counterfeit EEE parts. The documented process for the investigation shall address the detection, verification, resolution, and control of in process (post acceptance) and in service suspect counterfeit or counterfeit EEE parts.

6.5. Traceability and Control

A. When a source cannot provide tracking from the original manufacturer, risk mitigation processes should be followed based on 6.7

Note: authorized source / distributor records enable tracking to the manufacturer (e.g. OCM/OEM) and are available upon request

B. Enable identification of the EEE parts and/or assemblies the product (s) impacted when suspect counterfeit or counterfeit EEE parts or assemblies are discovered prior to or after customer acceptance.

C. Control suspect counterfeit or counterfeit EEE parts to preclude their use or reentry into the supply chain by physically identifying and segregating the EEE parts from acceptable non suspect EEE parts and placing them in quarantine until dispositioned. Quarantine consists of controlled access space

D. Permanently render as unusable all suspect counterfeit or counterfeit EEE parts dispositioned for scrap, including the internal elements.

E. Assure all production EEE part inventories affected by the suspect counterfeit or counterfeit EEE parts are contained for disposition.

F. Implement a returns process that segregates returned EEE part until they are verified as new and unused.

6.6 Reporting

If any EEE part or end item, component, part, or assembly purchased or delivered is considered containing EEE to be suspect counterfeit or counterfeit, this must be report the suspect counterfeit or counterfeit EEE part in accordance with this procedure and applicable contractual / legal requirements.

A. TE Connectivity must report counterfeit electronic parts and suspected counterfeit electronic parts to the Contracting Officer and to the Government-Industry Data Exchange Program (GIDEP), if TE becomes aware of, or have reason to suspect that, any electronic part or end item, component, part, or assembly containing electronic parts purchased by the DoD, or purchased by TE or a TE customer for delivery to, or on behalf of, the DoD, contains counterfeit electronic parts or suspected counterfeit electronic parts.

B. Internally a suspect and verified counterfeit electronic part must be reported to Procurement and Quality Management and must remain at TE Connectivity. All suspected and verified counterfeit electronic parts (nonconforming material) must be contained and quarantined in accordance with quality TE Connectivity specification 102-19 – Nonconforming Material. Management should contact legal counsel and review the reporting process listed in the AS5553 Standard

6.7 Inspection and T**e**sting of Electronic Parts:

A. Inspection and testing of all received electronic parts is not required. The DoD has acknowledged in the preamble that "requiring the contractor to test and inspect all electronic parts would be prohibitive." TE Connectivity, may define the "requirement to test or inspect" as it "is dependent on the source of the electronic part". TE Connectivity is further allowed "to make risk-based decisions based on supply chain assurance measures." In accordance with DFARS 252.246-7007(c)(2), TE Connectivity will, where appropriate, select the test and inspections based on minimizing risk to the Government. Specifically, it will be based on (1) the assessed probability of receiving a counterfeit electronic part; (2) the probability that the inspection or test selected will detect a counterfeit electronic part; and (3) the potential negative consequences of a counterfeit electronic part being installed (e.g., human safety, mission success) where such consequences are made known to the TE.

NOTE TE Connectivity deems electronic parts procured from trusted suppliers, authorized suppliers, and approved suppliers as low risk. All other suppliers will need to be assessed, and a risk rating assigned.

B. Low risk electronic parts may not be required to be tested or inspected unless there is reason to believe the part may be suspected counterfeit part.

C. For electronic parts that are assigned a risk other than low risk or where a received electronic part is a suspected counterfeit part, those associates receiving, inspecting, or processing such parts must examine the electronic part to ensure the drawing, specification, type, class, style, part number, manufacturer, or other related information is present to detect or verify if it is in fact a suspected or counterfeit electronic parts. If any of these items are not present or, based upon the review, the electronic part remains a suspected counterfeit part, then the electronic parts should be identified in a nonconforming material document so the items may be identified and segregated to a nonconforming part location for further analysis.

D. In accordance with the process to control nonconforming products, suspected or counterfeit electronic parts are segregated to a nonconforming part location for storage until the disposition of the nonconforming material document is completed.

E. If further investigation concludes the electronic parts are not suspected or counterfeit electronic parts, the nonconforming material document may be dispositioned as "Accept". The reason for accepting the electronic part must be recorded on the document as a reference to the due diligence work and / or activity performed and then the parts released to inventory within (3) days.

F. If further investigation concludes that the electronic parts are suspected or counterfeit electronics parts, the parts shall be dispositioned accordingly, all required notices shall be given pursuant to Section 6.7 below, the Law Department shall be notified, and the parts shall be retained until otherwise directed by the Law Department.

7. VERIFICATION OF DUE DILIGENCE – ELECTRICAL COMPONENTS / ELECTRONIC PRODUCT

TE Connectivity considers the due diligence applied to the material purchase successful when this procedure is followed and when finished product meets the test or inspection requirements identified for the product or the standard work established for the product. A failed Electrical Component or Product does not mean the instance was caused by a counterfeit electronic part. TE Connectivity must verify the cause of the nonconformance and disposition the defect in accordance with Quality Specification 102-19 – Nonconforming Material. This procedure will apply if the deficiency is suspected or attributed to a counterfeit electronic part.

8. ELECTRONIC, FINISHED ELECTRONIC PRODUCT, AND / OR ELECTRONIC COMPONENT PARTS

8.1. Design, Operation, and Maintenance of Systems to Detect and Avoid Counterfeit Part

[Addresses DFARS 252.246-7007 requirements]

TE Connectivity may require documentation or process verification to ensure compliance to the TE Connectivity standard operating procedure for Counterfeit Parts for Electronic, Finished Electronic Product, and / or Electronic Component Parts when directed to obtain this information by one of its customers.

A. Buyer / Planner or the purchase order document will specify a Certificate of Conformance from the Supplier is delivered with the product or material.

B. Buyer / Planner will issue the purchase order document to the supplier listed on the drawing.

C. Buyer / Planner will issue the purchase order document to an approved distributor identified by the original part manufacturer or another resource when applicable.

D. Buyer / Planner will issue the purchase order document only to approved suppliers identified by TE Connectivity.

In the event electronic parts are procured from non-authorized sources (above requirements a thorough inclusive) Purchase order documented additional requirements, must include:

E. Testing – In House / On Site Verification and / or Annual Testing – Outside Laboratory, Organization, or Service Verification

F. Semi-annual Testing in House / On Site Verification -The Materials Engineer / Supplier Quality select product to test to verify compliance with the material requirements from in house or on site testing. The Materials Engineer and Supplier Quality determine the tests to perform using documented procedures like ASTM, ANSI, SAE, Military, or Industry process.

G. Annual Testing – Outside Laboratory, Organization, or Service Verification - The Materials Engineer or Supplier Quality selects product to test to verify compliance with the material requirements from outside laboratories, organizations, or service verification. The Materials Engineer and Supplier Quality arrange for the material delivery and determine the test to perform using documented procedures like an ASTM, ANSI, SAE, Military, or Industry process.

H. Test Results - The Materials Engineer or Supplier Quality review the test results to determine if the material tested meets the requirements identified.

I. Complete Certificate of Conformance and Traceability (C of CT) and Certificate of Test Conformance (C of TC)

J. Acceptable Test Results - The Materials Engineer or Supplier Quality contacts the Buyer / Planner Leader and the Operations Manager when the material meets the test requirements.

K. Failed Test Results - The Materials Engineer or Supplier Quality contacts the applicable Buyer / Planner function and the plant Operations Manager, when the material does not meet the test requirements. The Materials Engineer, Supplier Quality, Buyer / Planner function and plant Operations Manager when applicable, as well as other associates deemed necessary, determine the action to perform or implement when the material does not meet the test requirements.

L. Control of obsolete electronic parts

Where TE identifies electronic parts that are found to be obsolete they will make every effort to ensure the control of said obsolete electronic parts found in accordance with Quality Specification 102-19 – Nonconforming Material, in order to maximize the availability and use of authentic, originally designed, and qualified electronic parts throughout the product's life cycle in accordance with DFARS 252.246-7007(c)(12).

9. VERIFICATION OF DUE DILIGENCE – TE CONNECTIVITY SUPPLIED PARTS

9.1. Process for screening the Government-Industry Data Exchange Program (GIDEP) reports and other credible sources of counterfeiting information.

A. TE Connectivity will employ processes to keep continually informed of current counterfeiting information and trends.

B. In accordance with DFARS 252.246-7007(c)(10) TE Connectivity will keep informed of counterfeiting information and trends, specifically including detection and avoidance techniques contained in appropriate industry standards and using such information and techniques for continuously upgrading internal processes. This may include, but not be limited, to the screening of the Government-Industry Data Exchange Program (GIDEP) reports and other credible sources of counterfeiting information to avoid the purchase or use of counterfeit electronic parts in accordance with DFARS 252.246-7007(c)(11).

C. TE Connectivity considers the due diligence applied to the material purchase successful when this procedure is followed and when finished product meets the test or inspection requirements identified for the product or the standard work established for the product. A failed TE Part does not mean the instance was caused by a counterfeit electronic part. TE Connectivity must verify the cause of the nonconformance and disposition the defect in accordance with Quality Specification 102-19. This procedure will apply if the deficiency is suspected or attributed to a counterfeit electronic part.

D. TE Connectivity may require documentation or process verification to ensure compliance to the TE Connectivity standard operating procedures for Counterfeit Electronic Parts for TE Connectivity supplied product when directed to obtain this information by one of our Customers

10. COUNTERFEIT ELECTRONIC PART RISK MITIGATION

10.1. Methodologies to Identify Counterfeit Electronic Parts and Determination if Counterfeit:

[Addresses DFARS 252.246-7007 requirements]

TE Connectivity will make every effort to employ methodologies to identify suspect counterfeit electronic parts and to rapidly determine if a suspect counterfeit electronic part is, in fact, counterfeit. These methodologies will be directed at the design, operation, and maintenance of systems to detect and avoid counterfeit electronic parts and suspect electronic parts.

TE Connectivity may elect to use current Government- or industry-recognized standards to meet this requirement as outlined in DFARS 252.246-7007(c)(8).

The Original Component Manufacturer (OCM) referenced on the Purchase Order, TE Connectivity Drawing, or as indicated by the manufacturers unique part number shall be the manufacturer of the material supplied on the order. The material must be marked in accordance with the applicable procurement document whether it be a Military Specification, Defense Logistics Agency (DLA) drawing or TE Connectivity controlled drawing. Any unauthorized marking or remarking of components is prohibited. Unless otherwise specified in the purchase order the Seller shall verify by inspections and tests that the material conforms to this procedure.

The Seller or a test laboratory capable of performing such tests, (concurred to by TE Connectivity in writing), shall perform any testing required to meet the electrical requirements listed in this document. The results of such tests shall be documented and provided in the form of a C of TC (Certificate of Test Conformance). It shall be the requirement of the Supplier Quality function as requested by and in conjunction with the purchasing function to assure this requirement.

A separate inspection data / report shall be provided for each component date code / lot code when and where required. Test and inspection data shall include:

1. Original manufacturer's name
2. TE Connectivity Purchase order number
3. Part number and revision as specified on the TE Connectivity purchase order.
4. Component Date Code & Lot Code
5. Test/inspection results, conditions, and parameters
6. Quantity of parts tested
7. Serial numbers (where applicable)
8. Date of test/inspection
9. Inspector Identification
10. Sellers authorized agent’s signature (or electronic equivalent), title, and date.

11. CONTRACTOR PURCHASING SYSTEM REVIEW (CPSR)

Based on the final ruling, it is understood that the new requirement considers TE’s contractor's counterfeit electronic parts detection and avoidance system a part of TE's Contractor Purchasing System Review as performed by DCMA where applicable.

TE further understands that as of the effective date of the final rule, there will be two versions of the Contractor Purchasing System Administration clause, DFARS 252.244-7001. The "Basic" clause is supplemented to add additional criteria to subsection (c) that identifies the attributes a contractor's purchasing system must have related to a counterfeit electronic parts detection and avoidance system.

TE will assure that the "Basic" clause will be included in solicitations and contracts that contain FAR 52.244-2, Subcontracts. The "Alternate I" clause contains only the criteria related to a counterfeit electronic parts detection and avoidance system in subsection (c) and will be included in solicitations and contracts where compliance with the new DFARS 252.246-7007, Contractor Counterfeit Electronic Part Detection and Avoidance System, is required but otherwise do not contain FAR 52.244-2, Subcontracts.

TE further understands that if a deficiency related to the counterfeit electronic parts detection and avoidance system is determined by the ACO to be significant, the purchasing system may be disapproved, and a withholding of payments can result.

TE further understands that the final ruling also addresses concerns about DCMA resources in expanding the scope of a CPSR and states that the CPSR will include assistance from the local DCMA Quality Assurance Representative and that the CPSR group will perform as many reviews as possible, based on yearly risk assessments and requests from administrative contracting officers. When performing a CPSR, the review will include an examination of the contractor's policies and procedures related to the detection and avoidance of counterfeit electronic part.