



AEROSPACE STANDARD

AS6081®

REV. A

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Superseding AS6081

(R) Counterfeit Electrical, Electronic, and Electromechanical (EEE) Parts:
Avoidance, Detection, Mitigation, and Disposition -
Independent Distribution

RATIONALE

This standard is being updated to address the evolving risk of counterfeit electrical, electronic, and electromechanical (EEE) parts entering the aerospace supply chain, posing performance, reliability, and safety risks.

FOREWORD

This standard establishes requirements and practices to mitigate the risk of buying, receiving, and selling suspect counterfeit or counterfeit EEE parts. This document standardizes requirements, practices, and methods related to supplier management, procurement, inspection, and test/evaluation, as well as response strategies when suspect counterfeit or counterfeit EEE parts are discovered. Implementation of the requirements of this document provides a vehicle for supply chain members to collaborate and minimize risk.

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Documents

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1. SCOPE

1.1 Purpose

This SAE Aerospace Standard (AS) standardizes practices to identify reliable sources to procure electrical, electronic, and electromechanical (EEE) parts, assess and mitigate the risk of distributing suspect counterfeit or counterfeit EEE parts, control suspect counterfeit or counterfeit EEE parts, and report incidents of suspect counterfeit and counterfeit EEE parts.

1.2 Application

This standard sets forth practices and requirements for use by Independent Distributors or Brokers of EEE parts or any entity performing open market transactions. This document does not apply to system integrators, their original equipment manufacturers (OEMs), or authorized (franchised) distributors and aftermarket manufacturers when supplying EEE parts obtained directly from the original component manufacturer (OCM) or the OCM authorized (franchised) distributor for whom they are authorized. The requirements of this standard are intended to be applied and flowed down through the supply chain to all Independent Distributors, or Brokers of EEE parts or any entity performing open market transactions that procure EEE parts and/or assemblies, regardless of type, size, and product provided. This standard is not intended to stand alone, supersede, or cancel requirements established by the contract with the customer. This standard can be used by internal and external parties, including Certification Bodies (CBs) accredited by an International Accreditation Forum (IAF) Multilateral Recognition Arrangements (MLA) Signatory Accreditation Body (AB) (<http://www.iaf.nu/>), to meet customer, regulatory, or the organization's requirements to mitigate the risk of conducting commerce in suspect counterfeit or counterfeit EEE parts. This standard does not "qualify" or "certify" the EEE parts.

The types of sources of supply mentioned within this document include OCM, OEM, authorized (franchised) distributor, independent distributor, broker, stocking distributor, and aftermarket manufacturer.

Information marked "NOTE" or "NOTES" is for guidance in understanding or clarifying the associated text.

A related standard, AS5553, provides guidelines and requirements for counterfeit EEE part risk mitigation that are applicable for use by OEMs, and their subcontractors who manufacture assemblies. Organizations may flow down to independent distribution applicable requirements from AS5553, AS6081, and/or other requirements.

1.2.1 Appendices

Unless otherwise specified, the content of the appendices is provided as guidance and can be invoked in whole or in part, by the policies, requirements, or processes of the organization. If the organization or the customer has mandated compliance with the appendices, in whole or in part, the extent to which the appendices apply shall be considered requirements and included, or referenced, in the organization's Counterfeit EEE Parts Control Plan (see 3.4).

If the organization or the customer has not mandated compliance with the appendices, in whole or in part, then nonconformance to the appendices is not considered a nonconformity to AS6081.

2. REFERENCES

2.1 Applicable Documents

The following publications form a part of this document to the extent specified herein. For references with dates, only the edition cited applies. For references without dates, the latest edition of the referenced document applies. In the event of conflict between the text of this document and references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.

2.1.1 SAE Publications

Available from SAE International, 400 Commonwealth Drive, Warrendale, PA 15096-0001, Tel: 877-606-7323 (inside USA and Canada) or +1 724-776-4970 (outside USA and Canada), <http://www.sae.org/>.

AIR6273	Terms, Definitions, and Acronyms, Counterfeit Materiel or Electrical, Electronic, and Electromechanical Parts
ARP6178	Fraudulent/Counterfeit Electronic Parts; Tool for Risk Assessment of Distributors
ARP6328	Guideline for Development of Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition Systems
AS5553	Counterfeit Electrical, Electronic, and Electromechanical (EEE) Parts; Avoidance, Detection, Mitigation, and Disposition
AS6171	Test Methods Standard; General Requirements, Suspect/Counterfeit Electrical, Electronic, and Electromechanical Parts
AS6174	Counterfeit Materiel; Assuring Acquisition of Authentic and Conforming Materiel
AS6462	Counterfeit Electrical, Electronic, and Electromechanical (EEE) Parts; Avoidance, Detection, Mitigation, and Disposition Verification Criteria
AS6496	Counterfeit Electronic Parts: Avoidance, Detection, Mitigation, and Disposition - Authorized/Franchised Distribution
AS9003	Inspection and Test Quality Systems, Requirements for Aviation, Space, and Defense Organizations
AS9100	Quality Management Systems - Requirements for Aviation, Space, and Defense Organizations
AS9120	Quality Management Systems - Requirements for Aviation, Space, and Defense Distributors

2.1.2 ANSI Accredited Publications

Copies of these documents are available online at <https://webstore.ansi.org/>.

ANSI/ASQC E4	Quality Management Systems for Environmental Information and Technology Programs
ANSI/ESD S20.20	Protection of Electrical and Electronic Parts, Assemblies and Equipment (Excluding Electrically Initiated Explosive Devices)
ANSI Z540.3	Requirements for the Calibration of Measuring and Test Equipment

2.1.3 Commercial Publications

2.1.3.1 ASD-STAN Publications

Available from ASD-STAN Secretariat, Rue Montoyer, 10/5, B-1000 Brussels, Belgium, Tel: +32 2 775 81 26, www.asd-stan.org.

ASD-STAN EN 4179 Aerospace and Defense Industries Association of Europe - Qualification and approval of personnel for non-destructive testing

2.1.3.2 ASME Publications

Available from ASME, P.O. Box 2900, 22 Law Drive, Fairfield, NJ 07007-2900, Tel: 800-843-2763 (U.S./Canada), 001-800-843-2763 (Mexico), 973-882-1170 (outside North America), www.asme.org.

ASME NQA-1 Quality Assurance Requirements for Nuclear Facility Applications (NQA-1 - 2015)

2.1.3.3 ASNT Publications

Available from American Society for Nondestructive Testing, P.O. Box 28518, 1711 Arlingate Lane, Columbus, OH 43228-0518, Tel: 800-222-2768 (inside U.S. and Canada) or 614-274-6003 (outside USA), www.asnt.org.

ANSI/ASNT CP-189 American Society for Nondestructive Testing Standard for Qualification and Certification of Nondestructive Testing Personnel

ASNT SNT-TC-1A American Society for Nondestructive Testing - Recommended Practice for Personnel Qualification and Certification of Nondestructive Testing

2.1.3.4 CTI Publications

Available from CTI, 211 Homewood Dr., Huntsville, AL, 35801 Tel: 256-651-1551 (U.S./Canada), <https://www.cti-us.com/index.htm>.

CCAP-101 Counterfeit Components Avoidance Program, Certification for Independent Distributors

2.1.3.5 IDEA Publications

Available from IDEA, 2250 Double Creek Dr #6474, Round Rock, TX 78683-0061, Tel: 714-670-0200 (U.S./Canada), <https://www.idofea.org/>.

IDEA-QMS-9090 Quality Management System Standard for Independent Distributors of Electronics Association Members

IDEA-STD-1010 Acceptability of Electronic Components Distributed in the Open Market

IDEA-TRN-1000 Avoidance and Visual Indicators of Counterfeit Parts for Management

IDEA-TRN-2000 Inspection for Visual Indicators of Counterfeit Parts

2.1.3.6 IPC Publications

Available from IPC, 3000 Lakeside Drive, 309 S, Bannockburn, IL 60015, Tel: 847-615-7100, www.ipc.org.

IPC J-STD-001 Requirements for Soldered Electrical and Electronic Assemblies

IPC/JEDEC J-STD-033 Handling, Packing, Shipping and Use of Moisture/Reflow Sensitive Surface Mount Devices

2.1.3.7 JEDEC Publications

Available from JEDEC, 3103 North 10th Street, Suite 240-S, Arlington, VA 22201-2107, <https://www.jedec.org/>.

JEDEC JESD31 General Requirements for Distributors of Commercial and Military Semiconductor Devices

2.1.4 Government Publications

These courses are available online at <https://www.dau.edu/>.

LOG 0320 Defense Acquisition University Course - Preventing Counterfeit Electronic Parts from Entering the DoD Supply System

LOG 0620 Defense Acquisition University Course - Counterfeit Prevention Awareness

Copies of these documents are available online at <https://www.dla.mil>.

QSLD Qualified Suppliers List of Distributors

QTSL Qualified Testing Suppliers List

2.1.5 ISO Publications

Available from International Organization for Standardization, ISO/IEC Central Secretariat, 1, ch. de la Voie-Creuse, CP 56, CH-1211 Geneva 20, Switzerland, Tel: +41 22 749 01 11, www.iso.org.

ISO 9000 Quality Management Systems - Fundamentals and Vocabulary

ISO 9001 Quality Management Systems - Requirements

ISO 9712 Non-destructive testing - Qualification and certification of NDT personnel

ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories

2.2 Terms and Definitions

Other than those terms listed below, the definitions of terms used in this standard are in accordance with AIR6273.

NOTE: In the event of conflicting definitions, the definitions within AS6081 take precedence.

2.2.1 ELECTRICAL, ELECTRONIC, AND ELECTROMECHANICAL (EEE) PART(S)

Components designed and built to perform specific functions using electric power and/or an electric or electromagnetic signal to demonstrate functionality, which are not subject to disassembly without destruction or impairment of design use.

NOTES:

- a. Examples of electromagnetic signals are radio waves, microwaves, infrared waves, visible light, ultraviolet waves, X-rays, and gamma rays.
- b. Electromechanical parts have electrical inputs with mechanical outputs, or mechanical inputs with electrical outputs, or combinations of each.

A partial list of EEE parts can include the following:

- a. Electrical parts: Resistors, capacitors, inductors, wire, cables, transformers, and connectors.
- b. Electronic parts: Active devices, such as monolithic microcircuits, hybrid microcircuits, diodes, and transistors.
- c. Electromechanical parts: Motors, synchros, servos, and some relays which may appear as assemblies but are considered parts.

2.2.2 SUSPECT COUNTERFEIT EEE PART

A part for which there is objective and credible evidence indicating that it is likely a counterfeit.

2.2.3 COUNTERFEIT MATERIEL OR EEE PART

- a. An unauthorized (a) copy, (b) imitation, (c) substitute, or (d) modified materiel or EEE part, which is knowingly, recklessly, or negligently misrepresented as a specified genuine item from an authorized manufacturer, or
- b. A previously used materiel or EEE part which has been modified and is knowingly, recklessly, or negligently misrepresented as new without disclosure to the customer that it has been previously used.

NOTE: This definition may differ from civil or criminal laws that address the acts of counterfeiting or fraud and is not intended to make a legal determination. Used materiel or EEE parts sold as new that have not been modified are not counterfeit, according to some civil and criminal statutes.

2.3 Related Terms and Definitions

AUTHORIZED AFTERMARKET MANUFACTURER: A manufacturer that meets one or more of the following criteria:

The manufacturer is authorized by the OCM to produce and sell replacement EEE parts, usually due to an OCM decision to discontinue production of an EEE part. EEE parts supplied are produced from materials that have been:

- a. transferred from the OCM to the aftermarket manufacturer or
- b. produced by the aftermarket manufacturer using OCM tooling and/or intellectual property (IP).

AUTHORIZED SOURCE: Original component manufacturers and OCM-authorized sources of supply for an EEE part (i.e., franchised distributors, authorized distributors), and authorized aftermarket manufacturers.

CERTIFICATE OF CONFORMANCE (CoC): A document signed by a responsible party for the supplier that formally declares that applicable requirements have been met.

NOTE: The document may include information such as manufacturer, distributor, quantity, lot and/or date code, inspection date, specifications, etc. Certificates of Conformance can vary. It may certify conformance to a MIL-SPEC or the manufacturers' specification, but not certify conformance to a specific customer's order. This definition does not meet the requirements of FAR 52.246-15.

DISTRIBUTOR-APPROVED SUPPLIER: A supplier that has been formally assessed, is determined to use acceptable counterfeit EEE parts risk mitigation and quality management processes and is entered on the procuring entity's register of approved suppliers for that item.

NOTE: Formal assessment can be performed by audits, surveys, document review, etc.

DISTRIBUTION AGREEMENT: A specific, written contract between the manufacturer and the distributor that authorizes the distributor to resell the manufacturer's parts. Contractual terms include, but are not limited to, distribution region, distribution products or lines, and warranty flow down from the manufacturer. These agreements often include failure analysis support, return privileges and product change notifications.

DOCUMENTED INFORMATION: Records/documents that provide evidence of conformity with requirements specified herein.

GIDEP (GOVERNMENT-INDUSTRY DATA EXCHANGE PROGRAM): A cooperative activity between U.S. and Canadian government and industry participants seeking to reduce or eliminate expenditures of resources by sharing technical information essential during research, design, development, production, and operational phases of the life cycle of systems, facilities, and equipment.

NOTE: GIDEP is used by the governments and industry to report non-conforming and counterfeit parts or material.

HOMOGENEOUS LOT: A group of parts that:

- a. are received in a single shipment (whether in single or multiple packages),
- b. are marked or otherwise identified with identical lot, batch, run, and identification information (e.g., dates codes, lot codes),
- c. are identical in appearance to the unaided eye (parts and packaging),
- d. appear to have been subjected to the same handling, packaging, and/or storage conditions, and
- e. have maintained their physical placement relative to each other (i.e., have never been separated based on evidence such as source, packaging, labeling).

MASTER DISTRIBUTOR: A master distributor, also known as a wholesale distributor, is a distributor whose primary business is to sell to other distributors. A master distributor may or may not be an authorized distributor.

OPEN MARKET: The trading market that buys or consigns excess inventories of EEE parts and subsequently utilizes these inventories to supply needs of an end-user.

NOTE: The open market may include the purchase and sale of EEE parts where the full supply chain traceability of such EEE parts is unknown.

ORGANIZATION: In the context of this document, organization refers to any entity that supplies EEE parts to the customer.

PACKAGING (COMPONENT): Component packaging refers to the manner in which EEE parts are packaged in preparation for use by electronic assemblers. The determination of packaging types is determined by product sensitivities such as moisture, physical (lead pitch, co-planarity), electrostatic discharge (ESD), as well as the method (manually, or by use of automated equipment) to be used to place EEE parts on the printed circuit board.

NOTE: There are four main types of packaging: bulk, trays, tubes, and tape and reel.

PART, ACTIVE: An electronic component that contains semiconductor junctions. Examples of active parts include monolithic microcircuits (ICs), hybrid microcircuits, and semiconductor devices such as diodes, silicon-controlled rectifiers, and transistors.

PART, PASSIVE: An electrical and/or electromechanical component that does not contain semiconductor junctions. Examples of passive electrical parts include resistors, capacitors, inductors, transformers, wire and cables, and connectors. Examples of passive electromechanical parts include motors, synchros, servos, and some relays.