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Purpose:

The purpose of this work instruction is to document the necessary avoidance, detection, mitigation, and disposition processes to prevent counterfeit parts, especially active or passive electronic components (A/PECs), from entering into our customers' supply stream, thereby enabling the fulfillment of our customers' requirements, and continued customer satisfaction.

This work instruction establishes and documents 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 parts
- e. Controlling parts identified as counterfeit
- f. Reporting counterfeit parts to other potential users and Government investigative authorities

Counterfeit Part (CP) - For purposes of the context as described herein, a counterfeit part is an A/PEC that is a copy or a substitute part without the legal right or authority to do so; or a part whose material, performance, or characteristics are knowingly misrepresented by the supplier or subcontract manufacturer.

Examples of counterfeit parts include, but are not limited to:

- Parts which do not contain the proper internal construction (die, manufacturer, wire bonding, etc.) consistent with the ordered part.
- Parts which have been used, refurbished or reclaimed, but represented as new product
- Parts which have different package style or surface plating/finish than the ordered parts.
- Parts which have not successfully completed the OCM's/OEM's full production and test flow, but are represented as completed product.
- Parts sold as up-screened parts, which have not successfully completed up-screening
- Parts sold with modified labeling or markings (e.g. OCM/OEM part number & logo, date code, etc.) intended to misrepresent the part's form, fit, function, or grade as defined per Government, industry accepted or OCM/OEM published specifications, or national consensus standards.

Scope:

Innovative Computer Engineering (I.C.E.) Quality Management System (QMS) procedures serve to satisfy the prevention and detection of counterfeit parts.

Responsibility:

1. Supplier Approval
 - a. I.C.E. Supplier Quality Manager is responsible to survey suppliers, approve suppliers, and to monitor their performance.
2. Procurement
 - a. I.C.E. Product Group Manufacturing Managers and their Buyers are responsible for procuring items or services.
3. Quality Planning
 - a. I.C.E. Quality Assurance Engineers (QAEs) are primarily responsible for generating:
 - I. Inspection Procedures
 - II. Test Procedure Document, Generation, Release and Management

III. The QAEs shall initiate these documents in such a manner that will maximize the potential for detecting counterfeit parts and thereby minimizing the potential risk of counterfeit parts from entering our customers' supply chain

4. Inspection and Test

- a. Inspection and test personnel are responsible for initiating and executing the necessary inspection and test procedures to prevent counterfeit parts from entering I.C.E. customers' supply stream
- b. The responsibility for detecting suspect parts/counterfeit parts and preventing them from entering our customers' supply chain primarily lies with

I. Receiving Inspection

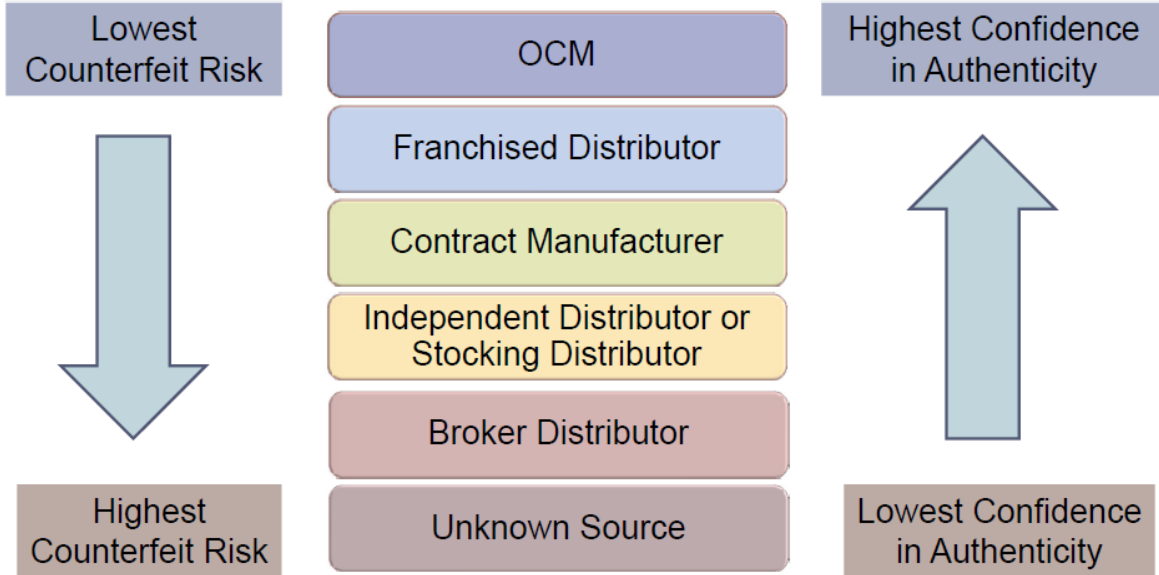
II. Manufacturing Inspection

III. Test Personnel

5. Material Handling Personnel and Production Operators shall be vigilant and report any noted anomalous/suspect part conditions to their supervisor for appropriate action.

6. Counterfeit Risk Assessment

Counterfeit Risk and Confidence in Authenticity*



* SAE Aerospace Standard AS5553: Counterfeit Electronic Components; Avoidance, Detection, Mitigation, and Disposition

7. Counterfeit Materials Categorization

		Detection Methods								
			External Visual & Phys Dim	XRF Analysis	Mark Perm	Internal Visual	Basic DC Test	Min Func Test 25C	Full Spec Extended Temps	Test & Qual
Counterfeit Type	Non Functioning Devices	No Die	Possible	No	Possible	Yes	Yes	Yes	Yes	Yes
		Wrong Die Re-Marked	Possible	No	Possible	Likely	Yes	Yes	Yes	Yes
		Board Pulls	Possible	No	No	No	Possible	Likely	Yes	Yes
	Functioning Devices	Failed Real Parts	No	No	No	No	Possible	Likely	Yes	Yes
		Speed up-marking	Possible	No	Possible	No	No	Possible	Yes	Yes
		Spec up-marking	Possible	No	Possible	No	No	Possible	Yes	Yes
		Temp up-range	Possible	No	Possible	No	No	No	Yes	Yes
		Pb Free Re-marked	Possible	Yes	Possible	No	No	No	No	No
		Lesser part (Knock-off)	Possible	No	Possible	Possible	Possible	Possible	Likely	Yes

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8. References:

- SAE Aerospace Standard AS5553: Counterfeit Electronic Components; Avoidance, Detection, Mitigation, and Disposition
- SAE Aerospace Standard AS6174: Counterfeit Material; Assuring Acquisition of Authentic and Conforming Material.
- <http://www.analog.com/en/other-products/sampletrack-and-hold0amplifiers/ad585/products/product.html>
- SMT Corp – Miscellaneous charts and images on sample counterfeit parts.
- IDEA-STD-1010-A: Acceptability of Electronic Components Distributed in the Open Market
- Pecht, Humphrey , “Addressing Obsolescence – The Uprating Option”, IEE Transactions on Components and Packaging Technologies, V31, No. 3, September 2008
- <http://counterfeitparts.wordpress.com>
- <http://www.acq.osd.mil/dpap/index.html>
- <http://www.integra-tech.com/>