

24A - Detection & Prevention of Counterfeit Commercial & Mil-grade Electronics

Presenters

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Session Summary

Counterfeit parts is a growing business, with the Federal Trade Commission reporting over \$3 billion a year in counterfeit automotive parts, and the Federal Aviation Administration reporting that more than 2 % of the 26 million active parts used in the aerospace industry are either counterfeit or unapproved. Counterfeiting of electronics components is possible due to the huge amount of waste that is created and recycled worldwide. Commercial industry requirements combined with EU environmental RoHS & WEEE legislation create component shortages and the obsolescence of most military components. This, coupled with questionable source Internet material, has turned electronics counterfeiting into a lucrative business. "Reclaimed" parts that are fraudulently sold as new typically are ESD damaged, chemically contaminated, have little to no reliability, and compromise the electronics supply chain.

This presentation covers the definitions of counterfeit electronics and its impact on the trade industry as a whole. We review specific examples of counterfeit electronics and provide an overview of best practice strategies to assess and mitigate the risks that are associated with electronics acquisition. Best practice supplier selection methods and in-coming inspection analysis are also part of the agenda during this session.

About the Presenters - Aaron DerMarderosian Jr. and Kenneth P. Rispoli

Aaron DerMarderosian Jr., is Sr. Electrical Engineer II *w/honors* in Raytheon Company's Materials Engineering failure analysis laboratory in Andover, MA. Aaron's background includes reliability assessment, failure analysis, design verification testing, systems and circuit analysis, and accelerated life testing. Aaron is a senior member of IEEE and serves as the Boston Reliability Chapter Vice-chair (05, 09-10): Past Chair (06 - 08). Aaron received a Technical Innovation award and Patent in 1991, Engineering Technical Honors in 2004 and 2007, and has a BSEET from Northeastern University.

Ken Rispoli is a Senior Principal Engineer in Raytheon Company's Material Engineering Department in Sudbury, MA. He has over 30 years experience in the field of component evaluation, failure analysis, application engineering and specification. Recent work includes the assessment and integration of COTS hardware in military systems using Failure Mode and Effects Analysis (FMEA), together with Physics of Failure methodologies. Ken is an active member of ASM's Electronic Device Failure Analysis Society and IEEE. He is an instructor of Statistical Process Control and Design of Experiments, and holds a BS in Electrical Engineering from Merrimack College along with an MS in Electrical and Computer Engineering from the University of Massachusetts, Amherst.