



TECHNICAL REPORT

EIA-555™

Issued 1989-01
Stabilized 2015-08

Lot Acceptance Procedure for Verifying Compliance With the Specified Quality Levels (SQL) in PPM

NOTICE

This document has been taken directly from the original TechAmerica document and contains only minor editorial and format changes required to bring it into conformance with the publishing requirements of SAE Technical Standards. The release of this document is intended to replace the original with the SAE International document. Any numbers established by the original document remain unchanged.

The original document was adopted as an SAE publication under the provisions of the SAE Technical Standards Board (TSB) Rules and Regulations (TSB 001) pertaining to accelerated adoption of specifications and standards. TSB rules provide for (a) the publication of portions of unrevised specifications and standards without consensus voting at the SAE committee level, and (b) the use of the existing specification or standard format.

SAE Technical Standards Board Rules provide that: "This report is published by SAE to advance the state of technical and engineering sciences. The use of this report is entirely voluntary, and its applicability and suitability for any particular use, including any patent infringement arising therefrom, is the sole responsibility of the user."

SAE reviews each technical report at least every five years at which time it may be revised, reaffirmed, stabilized, or cancelled. SAE invites your written comments and suggestions.

Copyright © 2015 SAE International

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise, without the prior written permission of SAE.

TO PLACE A DOCUMENT ORDER: Tel: 877-606-7323 (inside USA and Canada)
Tel: +1 724-776-4970 (outside USA)
Fax: 724-776-0790
Email: CustomerService@sae.org
<http://www.sae.org>

SAE WEB ADDRESS:

Full document details: SAE EIA555

SAE values your input. To provide feedback on this Technical Report, please visit <http://www.sae.org/technical/standards/EIA555>

Documents
Document Sharing Hub

EIA-555-1988
APPROVED: December 22, 1988
REAFFIRMED June 12, 1997

EIA STANDARD

Lot Acceptance Procedure for
Verifying Compliance With the
Specified Quality Levels (SQL)
in PPM

EIA-555

EIA-555

JANUARY 1989

ELECTRONIC INDUSTRIES ASSOCIATION
ENGINEERING DEPARTMENT



TABLE OF CONTENTS

Section	Page
INTRODUCTION	ii
1. SCOPE	1
2. DEFINITIONS	2
3. TECHNICAL REQUIREMENTS	3
4. DETAILED PROCEDURES	4
APPENDIX A	6
FIGURE I	7
TABLE I	8

INTRODUCTION

In the ideal case, a supplier would deliver only specification compliant components to his customer. Unfortunately, this is not always possible. A customer must be able to communicate to a supplier a realistic nonconformance level that the customer is willing to tolerate. Lot acceptance plans such as MIL-STD-105 (AQL) used in the past, are not suitable for use in verifying today's low ppm nonconformance level requirements. This specification is a means by which ppm nonconformance level requirements can be verified on a lot by lot basis until such time that quality approaches the ultimate objective of near zero nonconformances. It allows a customer to set his quality requirements (Specified Quality Level) and provides a method for verifying that an individual lot meets those quality requirements (SQL).

This specification concentrates on measuring quality attributes (pass/fail), as many components are best suited to this technique. While other, often superior, techniques are available, they tend to require process specific information in their design and thus do not lend themselves to general application.

A key feature of this specification is that it provides incentives for suppliers to improve their quality. The lot acceptance portion of this specification requires larger sample sizes when quality declines and smaller sample sizes when quality improves. If a customer specifies the same quality requirements (SQL) to multiple suppliers of a component, those suppliers with superior quality (small suppliers quality (F)) will use fewer samples for acceptance testing while those suppliers with lesser quality (large F) will use more samples for acceptance testing.

Statistical verification of low nonconformance levels is rather difficult and costly, requiring extremely large sample sizes that are very impracticable. This specification verifies that a supplier's quality (F) has not shifted beyond the customer's quality requirements (SQL), which allows manageable sample sizes. In practice, the customer's quality requirements (SQL) are likely to be on the order of 15 times the supplier's quality (F).

It is anticipated that this specification would be principally applied at the supplier's last inspection point, usually for every lot. However, it could also be applied in various other locations, including the customer's incoming inspection.