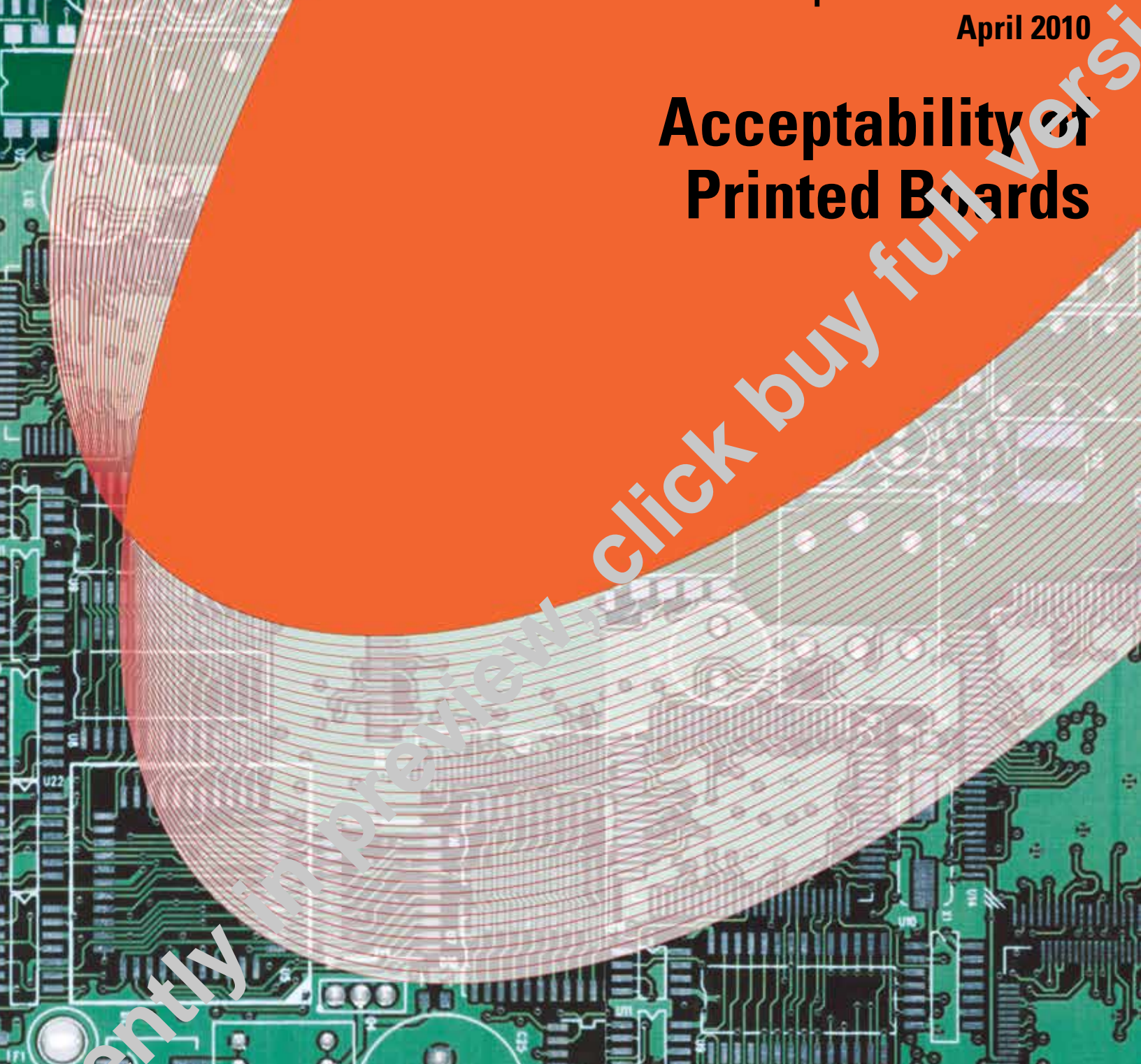


IPC-A-600

Revision J – May 2016
Supersedes Revision H
April 2010

Acceptability of Printed Boards



Developed by

Association Connecting Electronics Industries



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IPC-A-600J

Acceptability of Printed Boards

If a conflict occurs between the English and translated versions of this document, the English version will take precedence.

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Users of this publication are encouraged to participate in the development of future revisions.

Contact:

IPC
3000 Lakeside Drive, Suite 105N
Bannockburn, Illinois
60015-1249
Tel 847.615.7100
Fax 847.615.7105

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Product Assurance Committee

Chair
Robert Cooke
NASA Johnson Space Center

Vice-Chair
Debbie Wade
Advanced Rework Technology-A.R.T

IPC-A-600 Task Group

Co-Chair
Mark Buechner
BAE Systems

Co-Chair
Randy Reed
R. Reed Consultancy LLC

Technical Liaison of the IPC Board of Directors

Bob Neves
Microtek (Changzhou) Laboratories

IPC-A-600 Task Group

Elizabeth A. Allison, NTS - Baltimore	Stephen B. Fribbins, Fribbins Training Services	Jennifer G., TTM Technologies
Alisha A. Amar, Lockheed Martin Space Systems Company	Lionel Fullwood WKK, Distribution Ltd.	Clifford M. Maddox, Boeing Company
Lance A. Auer, Raytheon Missile Systems	Mahendra S. Gandhi, Northrop Grumman Aerospace Systems	Brian D. Madsen, Continental Automotive Systems
Jimmy Baccam, Lockheed Martin Missiles & Fire Control	Thomas F. Gardeski, Gemini Sciences, LLC	Chris Mahanna, Robisan Laboratory Inc.
Robert F. Bagsby, Rockwell Collins	Cynthia A. Gomez, Continental Termic SA de CV	Israel Martinez Montano, Continental Automotive Nogales S.A. de C.V.
John A. Bauer, Rockwell Collins	Jose Luis Gonella, IN AP S.E.	Tim McKliget, Holaday Circuits Inc.
Steve Billiet, TTM Technologies	Constantino J. Gonzalez, ACME Training & Consulting	Matthew T. McQueen, NSWC Crane
James F. Blanche, NASA Marshall Space Flight Center	Vicka Hammett, Honeywell Inc. Air Transport Systems	Renee J. Michalkiewicz, NTS - Baltimore
Wendi Boger, TTM Technologies	Louis J. Hart, Compunetics Inc.	Michael P. Miller, NSWC Crane
Scott A. Bowles, L-3 Fuzing and Ordnance Systems, Cincinnati	Francois Henault, Raytheon Company	James J. Monarchio, TTM Technologies, Inc.
Steven A. Bowles, L-3 Fuzing and Ordnance Systems, Cincinnati	Mike Hill, TTM Technologies	Alton Moore, Raytheon Company
Matthew J. Byrne, BAE Systems Platform Solutions	Lorraine Hook, Streamline Circuits	Gary E. Morgan, Ball Aerospace & Technologies Corp.
Ron Carter, PWB Interconnect Solutions USA Inc.	Frank Huijsmans, PIEK International Education Centre (I.E.C.) BV	Peter A. Navarro, BAE Systems Inc.
Byron Case, L-3 Communications	Todd E. Jarman, L-3 Communications	Robert Neves, Microtek (Changzhou) Laboratories
Denise Chevalier, Amphenol Printed Circuits, Inc.	Joseph E. Kane, BAE Systems Platform Solutions	Steven M. Nolan, Lockheed Martin Mission Systems & Training
Michael A. Collier, Teradyne Printed Circuit Technologies	Allen Keeney, Johns Hopkins University	Debora L. Obitz, National Technical Systems Anaheim
Robert W. Cooke, NASA Johnson Space Center	Jason Koch, Robisan Laboratory Inc.	Gerard O'Brien, Solderability Testing & Solutions, Inc.
Kell M. Daniluk, NASA Goddard Space Flight Center	Nick S. Koop, TTM Technologies	Patrick O'Keefe, Holaday Circuits Inc.
Don D. Dapriest, Lockheed Martin Missiles & Fire Control	Kelly Kovalovsky, i3 Electronics	William A. Orloff, Raytheon Company
Vincent L. Edmonds, Viasystems Group, Inc.	Vijay Kumar, Lockheed Martin Missile & Fire Control	Mel Parrish, STI Electronics, Inc.
Robert Farfan, TTM Technologies	Leo P. Lambert, EPTAC Corporation	Gerry Partida, Marcel Electronics International
Gary M. Ferrari, FTG Circuits	Minsu Lee, Korea Printed Circuit Association	Helena Pasquito, EPTAC Corporation
Daniel L. Foster, Missile Defense Agency	Jeff Lewis, Holaday Circuits Inc.	Jan Pedersen, Elmatica AS
	Daniel A. Lipps, L-3 Fuzing and Ordnance Systems, Cincinnati	Stephen Pierce, SGP Ventures, Inc.
	Dan Loew, Viasystems Group, Inc.	John A. Potenza, Lockheed Martin Mission Systems & Training

Acknowledgment (cont.)

Jose A. Rios, Massachusetts Institute of
Technology

Martin Scionti, Raytheon Missile Systems

Jose M. Servin, Olivares, Continental
Temic SA de CV

Gilbert Shelby, Raytheon Systems
Company

Russell S. Shepherd, National Technical
Systems Anaheim

Rajwant Sidhu, Viasystems Technologies
Corp., L.L.C.

Richard C. Snogren, Bristlecone LLC

Marshall H. Stolstrom, TTM Technologies,
Inc.

Ingrid Swenson, TTM Technologies, Inc.

Dung (Young) Q. Tiet, Lockheed Martin
Space Systems Company

Bradley E. Toone, L-3 Communications

Crystal E. Vanderpan, UL LLC

Juan F. Vasquez, TTM Technologies

Sharon T. Ventress, U.S. Army Aviation &
Missile Command

Debbie Wade, Advanced Rework
Technology-A.R.T

Rob Walls, PIEK International Education
Centre (I.E.C.) BV

Clark F. Webster, ALL Flex LLC

Alan F. Young, Jet Propulsion Laboratory

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1 INTRODUCTION

Introduction

1.1 SCOPE

This document describes the target, acceptable, and nonconforming conditions that are either externally or internally observable on printed boards. It represents the visual interpretation of minimum requirements set forth in various printed board specifications, e.g.; IPC-6010 series, J-STD-003, etc.

1.2 PURPOSE

The visual illustrations in this document portray specific criteria of the requirements of current IPC specifications. In order to properly apply and use the content of this document, the printed board should comply with the design requirements of the applicable IPC-2220 series document and the performance requirements of the applicable IPC-6010 series document. In the event the printed board does not comply with these or equivalent requirements, then the acceptance criteria should be as agreed between user and supplier (AABUS).

1.3 APPROACH TO THIS DOCUMENT

Characteristics are divided into two general groups:

- Externally Observable (section 2)
- Internally Observable (section 3)

“Externally observable” conditions are those features or imperfections which can be seen and evaluated on or from the exterior surface of the board. In some cases, such as voids or blisters, the actual condition is an internal phenomenon and is detectable from the exterior.

“Internally observable” conditions are those features or imperfections that require microsectioning of the specimen or other forms of conditioning for detection and evaluation. In some cases, these features may be visible from the exterior and require microsectioning in order to assess acceptability requirements.

Specimens should be illuminated during evaluation to the extent needed for effective examination. The illumination should be such that no shadow falls on the area of interest except those shadows caused by the specimen itself. It is recommended that polarization and/or dark field illumination be employed to prevent glare during the examination of highly reflective materials.

The illustrations in this document portray specific criteria relating to the heading and subheading of each page, with brief descriptions of the acceptable and nonconforming conditions for each product class. (See 1.4.) The visual quality acceptance criteria are intended to provide proper tools for the evaluation of visual anomalies. The illustrations and photographs in each situation are related to specific requirements. The characteristics addressed are those that can be evaluated by visual observation and/or measurement of visually observable features.

Supported by appropriate user requirements, this document should provide effective visual criteria to quality assurance and manufacturing personnel.

This document cannot cover all of the reliability concerns encountered in the printed board industry; therefore, attributes not addressed in this issue **shall** be AABUS. The value of this document lies in its use as a baseline document that may be modified by expansions, exceptions, and variations which may be appropriate for specific applications.

When making accept and/or reject decisions, the awareness of documentation precedence must be maintained.

This document is a tool for observing how a product may deviate due to variation in processes. Refer to IPC-9191.

IPC-A-600 provides a useful tool for understanding and interpreting Automated Inspection Technology (AIT) results. AIT may be applicable to the evaluation of many of the dimensional characteristics illustrated in this document.

1.4 CLASSIFICATION

This standard recognizes that electrical and electronic products are subject to classifications by intended end-item use. Three general end-product classes have been established to reflect differences in producibility, complexity, functional performance requirements, and verification (inspection/test) frequency. It should be recognized that there may be overlaps of product between classes.

Process Indicator imperfections are permitted and are deliverable.