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Generic Requirements for Printed Board Assembly Products Manufacturing Description Data and Transfer Methodology

Supersedes IPC-2581B
September 2013

An international standard developed by IPC

Association Connecting Electronics Industries

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In May 1995 the IPC's Technical Activities Executive Committee (TAEC) adopted Principles of Standardization as a guiding principle of IPC's standardization efforts.

Standards Should:

- Show relationship to Design for Manufacturability (DFM) and Design for the Environment (DFE)
- Minimize time to market
- Contain simple (simplified) language
- Just include spec information
- Focus on end product performance
- Include a feedback system on use and problems for future improvement

Standards Should Not:

- Inhibit innovation
- Increase time-to-market
- Keep people out
- Increase cycle time
- Tell you how to make something
- Contain anything that cannot be defended with data

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Developed by Product Data Description (Laminar View) Subcommittee (2-16) of the Electronic Product Data Description Committee (2-10) of IPC

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Contact:

IPC
3000 Lakeside Drive, Suite 105N
Bannockburn, Illinois
60015-1249
Tel 847 615.7100
Fax 847 615.7105

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Electronic Product Data Description Committee	Product Data Description (Laminar View) Subcommittee	Technical Liaison of the IPC Board of Directors
Chair	Chair	
Gary M. Ferrari	Karen McConnell	Bob Neves
FTG Circuits	Northrop Grumman Corporation	Microtek (Changzhou) Laboratories

Product Data Description (Laminar View) Subcommittee

Edward Acheson, Cadence Design Systems Inc.
Craig Armenti, Zuken USA, Inc.
Kjell Asp, Ericsson AB
Jimmy Baccam, Lockheed Martin Missiles & Fire Control
Robert Bagsby, Rockwell Collins
Tomas Bergsten, Ericsson AB
Gary Carter
Max Clark, Mentor Graphics Corporation
Joseph Clark, DownStream Technologies, LLC
Amy Clements, Zuken USA, Inc.
Larry Frost, Sanmina Corporation
Terry Hoffman, Cisco Systems Inc.
Satoshi Kojima, NEC Solution Innovators, Ltd.
Ronny Kovartovsky, Frontline PCB Solutions
Kevin Kusiak, Lockheed Martin Space Systems Company
Jeff Lewis, Holaday Circuits Inc.
Humair Mandavia, Zuken USA, Inc.
Jason Marsh, Nextflex
Karen McConnell, Northrop Grumman Corporation
Kristopher Moyer, Aerojet Rocketdyne
William Newhard, DownStream Technologies, LLC
Sheldon Parnes, Ansys
James Pierce, Axiom Electronics, LLC
Hemant Shah, Cadence Design Systems Inc.
Chris Shaw, Fujitsu Network Communications
Rainer Taube, Taube Electronic GmbH
Karel Tavernier, Ucamco
Denise Turley, Fujitsu Network Communications
John Vaughn, Fujitsu Network Communications
Wenju Wang, Cadence Design Systems Inc.
Steve Watt, Zuken USA, Inc.
Jamie Wise, WISE Software Solutions Inc.

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William Newhard, DownStream Technologies, LLC
James Pierce, Axiom Electronics, LLC
Hemant Shah, Cadence Design Systems Inc.
Chris Shaw, Fujitsu Network Communications
John Vaughn, Fujitsu Network Communications
Steve Watt, Zuken USA, Inc.
Jamie Wise, WISE Software Solutions Inc.

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1 SCOPE

This standard specifies the XML schema that represents the intelligent data file format used to describe printed board and printed board assembly products with details sufficient for tooling, manufacturing, assembly, and inspection requirements. This format may be used for transmitting information between a printed board designer and a manufacturing or assembly facility. The data is most useful when the manufacturing cycle includes computer-aided processes and numerical control machines.

The data can be defined in either English or International System of Units (SI) units. The format is a convergence of the IPC-2511 “GenCAM” and the Valor Computerized Systems “ODB-X” format structure.

1.1 Focus and intent

The generic format requirements are provided in a series of standards focused on printed board manufacturing, assembly, and inspection testing. This standard series consists of a generic standard (IPC-2581) that contains all the general requirements. There are seven sectional standards that are focused on the XML details necessary to accumulate information in the single file, that address the needs of the manufacturing disciplines producing a particular product.

The sectional standards (IPC-2582 through 2588) paraphrase the important requirements and provide suggested usage and examples for the topic covered by the sectional standard.

1.2 Notation

Although the data would be contained in a single file, the file can have different purposes as described in Section 4. The XML schema used for this standard follows the notations set forth by the W3C and is as follows:

element – Element appears exactly one time

element? – Element may appear 0 or 1 times

element* – Element may appear 0 or more times

element+ – Element may appear 1 or more times

Any IPC-258X file is composed of a high level element (IPC-2581) that contains up to six sub-elements:

Content – information about the contents of the 258X file

LogisticHeader – information pertaining to the order and supply data

HistoryRec – change information of the file

Bom – Bill of Materials (Material List) information

Ecad – Computer Aided Design (engineering) information

Avl – Approved Vendors List information