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Printed boards –
Electronic data description and transfer –

Part 10:
Electronic data hierarchy

Cartes imprimées –
Description et transmission de données informatiques –

Partie 10:
Hiérarchie des données électroniques

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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PRINTED BOARDS – ELECTRONIC DATA DESCRIPTION AND TRANSFER –

Part 10: Electronic data hierarchy

FOREWORD

1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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International Standard IEC 61182-10 has been prepared by IEC technical committee 52: Printed circuits.

The text of this standard is based on the following documents:

FDIS	Report on voting
52/831/FDIS	52/839/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 3.

A bilingual version of this standard may be issued at a later date.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication will be

- reconfirmed;
- withdrawn;
- replaced by a revised edition, or
- amended.

INTRODUCTION

This standard is intended to provide information on a series of data files that contain information, in an organized fashion, to convey the completed design description of a printed board and a printed board assembly. The data may be exchanged between Computer-Aided Design (CAD) Systems, Computer-Aided Engineering (CAE) Systems or Computer Aided Manufacturing (CAM) Systems.

The information about the design is organized into specific category files, where each file has a specific function and is independent of each other. Data exchange for a specific purpose is possible only if the category file information has been prepared in the CAD system or if a user desires to provide certain data to those outside the design function. The information about a unique printed board or printed board assembly is contained in a single file which is headed by “file control information” provided to identify those characteristics contained in the file. Specific rules for syntax are described for each file category as are the methodologies for organizing the information in a cohesive, unambiguous manner.

The format and syntax of EDH consists of statements that are prefaced by a unique “keyword” followed by one or more parameters intended to provide the necessary information. Parameters consist of numeric values and character strings, which maybe general character strings, reserved words, formatted descriptions and/or fixed format messages. Although the language for keywords and parameters is “English” using the ISO 7-bit coded character set (ISO registration number 006), any character set may be used for informational purposes or comment descriptions provided the language has a registration number according to ISO/IEC 646.

EDH category files are a small subset of other neutral design formats. These larger formats are intended to provide and define behavioral characteristics, design rules, simulation parameters, drawing information, timing analysis, etc., some of which may be user proprietary. The EDH category files bear a close relationship with design representation formats such as EDIF (IEC 61690-2) and STEP (ISO 10303, Parts 201 and 210). It is intended for this relationship to be maintained through continued surveillance by the originating committees. Inter-operational ability between these formats is important so that information content is mutually consistent. This coordination is necessary as technology changes require reassessments of keywords and parameters.

PRINTED BOARDS – ELECTRONIC DATA DESCRIPTION AND TRANSFER –

Part 10: Electronic data hierarchy

1 Scope

This part of IEC 61182 specifies data file formats used to describe printed board and printed board assembly products in sufficient detail for tooling, manufacturing, assembly, and testing requirements. These formats may be used for transmitting information between a printed board designer and a manufacturing or assembly facility. The files are also useful when the manufacturing cycle includes computer-aided processes and numerically controlled machines.

The information can be used for both manual and digital interpretation. The data may be defined in either English or SI units.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this part of IEC 61182. For dated references subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this part of IEC 61182 are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

IEC 60050(541):1990, *International Electrotechnical Vocabulary – Chapter 541: Printed circuits*