

INTERNATIONAL  
STANDARD

IEC  
61182-2

First edition  
2006-09

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Printed board assembly products –  
Manufacturing description data  
and transfer methodology –

Part 2:  
Generic requirements



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**61182-2**

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## Printed board assembly products – Manufacturing description data and transfer methodology –

### Part 2: Generic requirements

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## CONTENTS

FOREWORD.....	7
1 Scope and object.....	9
1.1 Focus and intent.....	9
1.2 Notation.....	9
2 Normative references.....	10
3 Documentation conventions.....	10
4 Requirements.....	12
4.1 Rules concerning the use of XML and XML Schema.....	13
4.2 Data organization and identification rules.....	14
4.3 Transformation characteristics (Xform).....	19
4.4 Substitution groups.....	21
5 Content.....	32
5.1 Content: FunctionMode.....	33
5.2 Function levels.....	35
5.3 Content: StepListRef.....	47
5.4 Content: LayerDescRef.....	47
5.5 Content: BomRef.....	48
5.6 Content: AvlRef.....	48
5.7 Content: DictionaryStandard.....	49
5.8 Content: DictionaryUser.....	66
5.9 Content: DictionaryFont.....	74
5.10 Content: DictionaryLineDesc.....	77
5.11 Content: DictionaryColor.....	79
5.12 Content: DictionaryFirmware.....	80
6 Logistic header.....	82
6.1 LogisticHeader.....	82
6.2 Role.....	83
6.3 Enterprise.....	84
6.4 Person.....	85
7 History record.....	86
7.1 HistoryRecord.....	86
7.2 FileRevision.....	87
7.3 SoftwarePackage.....	87
7.4 ChangeRec.....	88
8 BOM (Material List).....	89
8.1 BOM Header.....	90
8.2 BomItem.....	91
9 Electronic computer aided design (ecad).....	96
9.1 CadHeader.....	97
9.2 CadData/LayerDesc.....	100
9.3 CadData/StepList.....	109
10 Approved vendor list (AVL).....	150
10.1 AvlHeader.....	151
10.2 AvlItem.....	152
11 Glossary.....	154

Annexe A (informative) IPC-7351 Naming Convention for Land Patterns.....	155
Annexe B Informative references .....	160
Figure 1 – The IEC 61182-2 children element .....	13
Figure 2 – Printed board viewing.....	18
Figure 3 – Mirror and rotation diagram .....	21
Figure 4 – Bounding rectangle to round end character relationships .....	72
Figure 5 – Text transformation examples .....	73
Figure 6 – Rotation Angle .....	73
Figure 7 – Glyph bounding rectangles to Text bounding box relationships.....	77
Table 1– Graphical notation overview .....	11
Table 2 – Governing template basic types defined by W3C.....	16
Table 3 – Governing template basic types defined by IEC 61182-2-X.....	17
Table 4 – Xform characteristics.....	19
Table 5 – Substitution groups .....	22
Table 6 – Attribute substitution group .....	23
Table 7 – ColorGroup substitution group.....	25
Table 8 – Feature substitution group .....	25
Table 9 – Fiducial substitution group .....	26
Table 10 – FirmwareGroup substitution group.....	26
Table 11 – FontDef substitution group .....	27
Table 12 – LineDescGroup substitution group.....	27
Table 13 – Polystep substitution group .....	28
Table 14 – Simple substitution group .....	28
Table 15 – Standard primitive substitution group.....	29
Table 16 – StandardShape substitution group.....	31
Table 17 – UserPrimitive substitution group.....	31
Table 18 – UserShape substitution group.....	32
Table 19 – Content sub-element.....	32
Table 20 – File segmentation and function apportionment.....	34
Table 21 – Content – FunctionMode .....	36
Table 22 – Content – StepListRef .....	47
Table 23 – Content – LayerDescRef .....	48
Table 24 – Content – BomRef.....	48
Table 25 – Content – AvlRef .....	49
Table 26 – Content –DictionaryStandard.....	49
Table 27 – StandardPrimitive – Butterfly .....	50
Table 28 – StandardPrimitive – Circle .....	51
Table 29 – StandardPrimitive – Contour.....	51
Table 30 – StandardPrimitive – Diamond .....	53
Table 31 – StandardPrimitive – Donut.....	54

Table 32 – StandardPrimitive – Ellipse.....	55
Table 33 – StandardPrimitive – Hexagon .....	56
Table 34 – StandardPrimitive – Moire .....	57
Table 35 – StandardPrimitive – Octagon .....	58
Table 36 – StandardPrimitive – Oval.....	58
Table 37 – StandardPrimitive – RectCenter .....	59
Table 38 – StandardPrimitive –RectCham.....	60
Table 39 – StandardPrimitive – RectCorner .....	61
Table 40 – StandardPrimitive – RectRound.....	62
Table 41 – StandardPrimitive –Thermal .....	63
Table 42 – StandardPrimitive – Triangle .....	65
Table 43 – Content – DictionaryUser .....	66
Table 44 – UserPrimitive – Simple .....	67
Table 45 – UserPrimitive – Simple: Arc.....	67
Table 46 – UserPrimitive – Simple: Line .....	68
Table 47 – UserPrimitive – Simple: Outline .....	69
Table 48 – UserPrimitive – Simple: PolyLine.....	70
Table 49 – UserPrimitive –Text.....	71
Table 50 – UserPrimitive – UserSpecial.....	74
Table 51 – Content – DictionaryFont.....	74
Table 52 – FontDetEmbedded element .....	75
Table 53 – FontDetExternal element.....	75
Table 54 – FontDet – Glyph .....	76
Table 55 – Content – DictionaryLineDesc .....	77
Table 56 – LineDesc element.....	78
Table 57 – LineDescRef element .....	79
Table 58 – Content – DictionaryColor .....	79
Table 59 – Color element.....	80
Table 60 – ColorRef element .....	80
Table 61 – Content – DictionaryFirmware .....	80
Table 62 – CachedFirmware element.....	81
Table 63 – FirmwareRef element .....	82
Table 64 – LogisticHeader element.....	82
Table 65 – Role element.....	83
Table 66 – Enterprise element .....	84
Table 67 – Person element.....	85
Table 68 – HistoryRecord element.....	86
Table 69 – FileRevision element.....	87
Table 70 – SoftwarePackage element.....	87
Table 71 – ChangeRec element.....	88
Table 72 – Bom element .....	89
Table 73 – BomHeader element.....	90
Table 74 – BomItem.....	91

Table 75 – RefDes element.....	92
Table 76 – Tuning element .....	93
Table 77 Firmware element.....	93
Table 78 – Characteristics element.....	94
Table 79 Measured element.....	94
Table 80 – Ranged element .....	95
Table 81 – Enumerated element .....	96
Table 82 – Textual element.....	96
Table 83 – Ecad.....	96
Table 84 – CadHeader element .....	97
Table 85 – Spec element .....	98
Table 86 – SurfaceFinish element.....	99
Table 87 – ChangeRec element.....	100
Table 88 – CadData/LayerDesc elements .....	101
Table 89 – Layer element .....	101
Table 90 – Span element .....	103
Table 91 – DrillTool element.....	104
Table 92 Stackup element .....	105
Table 93 – StackupGroup .....	105
Table 94 – StackupImpedance element.....	107
Table 95 – CadData StepList .....	109
Table 96 – Step .....	110
Table 97 – Attribute substitution group.....	111
Table 98 – PadStack element .....	112
Table 99 – LayHole element .....	112
Table 100 LayerPad element .....	113
Table 101 – Route element.....	114
Table 102 – Set .....	115
Table 103 – Datum element .....	116
Table 104 – Profile element .....	117
Table 105 – StepRepeat element.....	118
Table 106 – Package element.....	120
Table 107 – Outline element.....	121
Table 108 – LandPattern element .....	122
Table 109 – SilkScreen element.....	123
Table 110 – AssemblyDrawing element.....	125
Table 111 – Pin element .....	127
Table 112 – Component element .....	128
Table 113 – VplPackage element.....	130
Table 114 – VplComponent element .....	132
Table 115 – LogicalNet elements .....	133
Table 116 – PhyNetGroup element .....	134
Table 117 – PhyNet element.....	134

Table 118 – LayerFeature element.....	136
Table 119 – Attribute element.....	139
Table 120 – Pad element.....	139
Table 121 – Fiducial.....	140
Table 122 – BadBoardMark element.....	141
Table 123 – GlobalFiducial element.....	142
Table 124 – GoodpanelMark element.....	143
Table 125 – LocalFiducial element.....	145
Table 126 – Hole element.....	146
Table 127 – Slot element.....	147
Table 128 – Features element.....	147
Table 129 – ColorGroup substitution group.....	148
Table 130 – LineDescGroup substitution group.....	149
Table 131 – DfxMeasurementList element.....	149
Table 132 – DfxMeasurement element.....	150
Table 133 – Avl element.....	150
Table 134 – AvlHeader element.....	151
Table 135 AvlItem element.....	152
Table 136 – AvlVmpn element.....	152
Table 137 – AvlMpn element.....	153
Table 138 – AvlVendor element.....	154

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**PRINTED BOARD ASSEMBLY PRODUCTS –  
MANUFACTURING DESCRIPTION DATA AND  
TRANSFER METHODOLOGY –**

**Part 2: Generic requirements**

FOREWORD

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International Standard IEC 61182-2 has been prepared by IEC technical committee 93: Design automation.

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

CDV	Report on voting
93/211/CDV	93/231/RVC

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 2.

The committee has decided that the contents of this publication will remain unchanged until the maintenance result date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

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

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

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# PRINTED BOARD ASSEMBLY PRODUCTS – MANUFACTURING DESCRIPTION DATA AND TRANSFER METHODOLOGY –

## Part 2: Generic requirements

### 1 Scope and object

This part of IEC 61182 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.

#### 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 (IEC 61182-2) that contains all the general requirements. There are four sectional standards that are focused on the XML details necessary to accumulate information in the single file, that addresses the needs of the design, fabrication, assembly and test disciplines producing a particular product.

The sectional standards (IEC 61182-2-1 through IEC 61182-2-4) 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 Clause 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 IEC 61182-2 file is composed of a high level element IEC 61182-2 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

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60194, *Printed board design, manufacture and assembly – Terms and definitions*

IEC 61188-5-1, *Printed boards and printed board assemblies – Design and use – Part 5-1: Attachment (land/joint) considerations – Generic requirements*

IEC 61188-5-2, *Printed boards and printed board assemblies – Design and use – Part 5-2: Attachment (land/joint) considerations – Discrete components*

IEC 61188-5-3, *Printed boards and printed board assemblies – Part 5-3: Sectional design and use requirements – Attachment (land/joint) considerations – Components with Gull-wing leads on two sides<sup>1</sup>*

IEC 61188-5-4, *Printed boards and printed board assemblies – Design and use – Part 5-4: Sectional requirements – Attachment (land/joint) consideration – Components with J leads on two sides<sup>2</sup>*

IEC 61188-5-5, *Printed boards and printed board assemblies – Design and use – Part 5-5: Sectional requirements – Attachment (land/joint) considerations – Components with Gull-wing leads on four sides<sup>2</sup>*

IEC 61188-5-6, *Printed boards and printed board assemblies – Design and use – Part 5-6: Attachment (land/joint) considerations – Chip carriers with J-leads on four sides*

IEC 61188-5-8, *Printed boards and printed board assemblies – Design and use – Part 5-8 : Sectional Requirement – Attachment (land/joint) considerations – Area array components (BGA, FBGA, CGA, LGA)<sup>2</sup>*

## 3 Documentation conventions

The XML file format standard and the XML Schema definition language standard, as defined by the World Wide Web Consortium (W3C), have been adopted by IEC for use in the IEC 61182 series of standards.

In addition to the text based schema notation, this document provides graphical representation of the structure of the file format. The XML diagrams are designed to effectively illustrate the structure and cardinality of elements and attributes that make up any IEC 61182-2 file. The notation in the graphics does not provide a complete visualization of the schema definition for the file format, but it does provide a good top down overview. Should there be any conflict between the graphical notation and the schema notation, the authoritative definition is the schema notation.

Table 1 provides an overview of the graphical notation used in the document.

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<sup>1</sup> To be published.