IPC-2222B

2020 - October

Sectional Design Standard for Rigid Organic Printed Boards

Supersedes IPC-2222A
December 2010

An international standard developed by IPC

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- 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

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- Keep people out
- Increase cycle time
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- Contain anything that cannot be defended with data

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Developed by the IPC-2221/2222 Task Group (D-31b) of the Rigid Printed Board Committee (D-30) of IPC

Supersedes:
IPC-2222A - December 2010
IPC-2222 - February 1998
IPC-D-275 - September 1991

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

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Acknowledgment

Any document involving a complex technology draws material from a vast number of sources across many continents. While the principal members of the IPC-2221/2222 Task Group (D-31b) of the Rigid Printed Board Committee (D-30) are shown below, it is not possible to include all of those who assisted in the evolution of this standard. To each of them, the members of IPC extend their gratitude.

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Sectional Design Standard for Rigid Organic Printed Boards

1 SCOPE

This standard establishes the specific requirements for the design of rigid organic printed boards.

The following overview describes what are the core knowledge and competencies to best serve in the role of *Printed Board Design Layout* as a stand-alone professional, or as the engineer performing this responsibility. Today's printed board designer needs to address numerous perspectives for success within a given schedule, with the goal of making the first design iteration work as intended, summarized as:

• Layout Solvability – Complex Packaging Skillset

• Electrical Integrity – Signal & Power Performance on all Layers

• Manufacturability – Design for Excellence (DfX) Considerations for High Yield and Lower Cost

• Application considerations – Environmental, Performance, Shelf life, etc.

The result provides for optimal component placement, routing density and electrical performance to achieve an efficient design with high yield and defect-free manufacturability.

1.1 Purpose The requirements contained herein are intended to establish specific design details that **shall** be used in conjunction with IPC-2221 to produce printed boards that perform as an integral part of functional electronic hardware.

The organic materials may be homogeneous, reinforced, or used in combination with inorganic materials; the interconnections may be single, double, or multilayered. They may be any combination able to perform the physical, thermal, environmental, and electronic function.

1.2 Document Hierarchy Document hierarchy **shall** be in accordance with the generic standard IPC-2221.

1.3 Presentation Presentation **shall** be in accordance with the generic standard IPC-2221.

1.4 Interpretation Interpretation **shall** be in accordance with the generic standard IPC-2221.

1.5 Definition of Terms The definition of all terms used herein **shall** be in accordance with IPC-T-50 and as defined in 1.5.1.

1.5.1 As Agreed Between User and Supplier (AABUS) A bilateral agreement which indicates additional or alternate requirements to be decided between the user and the supplier in the procurement documentation. Examples include contractual requirements, modifications to purchase documentation and information on the drawing. Agreements can be used to define test methods, conditions, frequencies, categories or acceptance criteria within a test, if not already established.

1.6 Classification of Products Classification of products **shall** be in accordance with the generic standard IPC-2221 and as defined in 1.6.1.

1.6.1 Printed Board Type This standard provides design information for different printed board types. Printed board types are classified as:

Type 1 – Single-Sided Printed Board
Type 2 – Double-Sided Printed Board
Type 3 – Multilayer Printed Board without blind or buried vias
Type 4 – Multilayer Printed Board with blind and/or buried vias
Type 5 – Multilayer Metal Core Printed Board without blind or buried vias
Type 6 – Multilayer Metal Core Printed Board with blind and/or buried vias

1.7 Applicability The contents of this standard may not apply to certain leading-edge technologies. Refer to IPC-2221 for additional information.