# Pred-X

BOM Based Simulation for PBA

Pred-X predicts the quality and test coverage of Printed Board Assemblies (PBA) solely based on Bill-of-Material (BOM) and basic assembly information. Pred-X assists Design-for-Assembly, Design-for-Test and assembly preparation by quantifying the impact of component, assembly and test options.

Quality and Test Quantification

Pred-X provides insight in the impact of design, assembly and test options on PBA quality and test coverage by calculating the impact of easily applied modifications of the BOM, the assembly flow and the test strategy.

The quality prediction is based on exact probability calculations and a rigorously extended IPC-7912 based physical defect opportunity model.
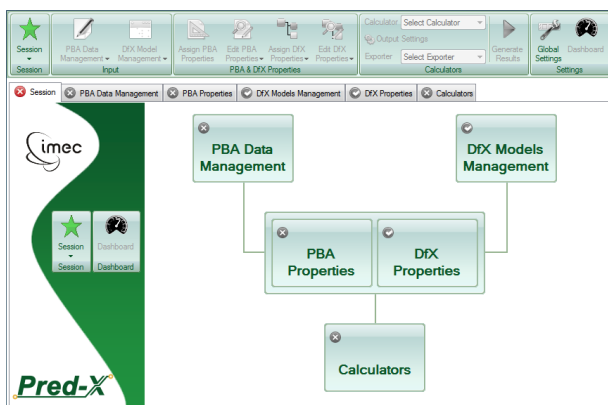
Failure probability (DPMO) and test coverage assignment at the extended defect opportunity level provides a differentiating, approximation-free calculation method for the first-pass yield, the test coverage, the quality after test and the failure probability at start-up. Analysis reports zoom in on components of choice clarifying the calculated failure probabilities and the impact on PBA quality.

From conceptual design to production

Pred-X is able to work with the limited amount of information available in an early design stage. Based on preliminary BOM information the impact on PBA yield of, e.g., QFP versus BGA packages or the need for ICT test points, can be quantified. This eliminates design iterations to improve yield and test coverage after production start. Pred-X supports the design and New Product Introduction progress with increasingly more accurate predictions.

Fully disclosed default models

DPMO model

Pred-X contains a default state-of-the-art assembly DPMO model based on a 500 million defect opportunity study. The model is fully disclosed to the user. The user can incorporate his own DPMO models or develop customized models starting from the default model which can be calibrated to observed production yields.
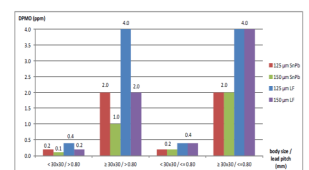
Test coverage models

Pred-X contains fully disclosed, algorithm based default test coverage models with tunable test parameters for all widely applied production test methods. The user can incorporate or create customized test coverage models.

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Pred-X

Ease of use

Pred-X requires only a standard Microsoft Windows platform. It uses an intuitive graphical user interface and interfaces with Microsoft Excel for input and reporting. This makes Pred-X ideally suited for SME.

Pred-X options

Pred-X is available in a PC and server version with an extendable number of user licenses. The update and support option provides the user with updates, e.g. of default models, training and implementation consultancy to ensure a quick start and an uninterrupted, value adding operation.

Future proof

With Pred-X cEDM launches a PBA simulation platform that will be extended with new features, modules and calculators. New developments include an assembly and PCB manufacturing flow calculator, a Design-for-Manufacturing evaluator and a PBA reliability module.

cEDM member discount

cEDM members and partners are entitled to discounts on the Pred-X software and support. For cEDM membership or partnership information go to www.cedm.be.

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JOIN cEDM

Seven reasons to join:

1. Free Design for X guidelines
2. Free DfX supporting tools
3. Free cEDM workshops on PBA and PCB themes
4. Priority access to the DfX Helpdesk
5. Company-specific consultancy services
6. Customer oriented training
7. Discounts on services, training and Pred-X purchase and funding application support

cEDM Mission

*To support the development and production of high quality, reliable and cost-effective electronic modules (PBA) by means of **knowledge** creation and sharing, **scientifically sound methodologies** and **collaboration** throughout the electronic supply chain.*

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