

# PCB Layout

## Release your designers – use our specialists

### Let Prevas do it!

Layout is a specialty of Prevas

The importance of the actual PCB layout of a design is paramount to the success of a development project. In response to this, Prevas has a layout group only dedicated to this hardware development discipline. Our experienced and dedicated PCB layouters offer their expertise in:

- The most modern tools – but we also master the standard
- From **Miniature layouts to rack size** PCBs – from **credit cards to high-density** computer PCB's
- Our huge IPC compatible database of components **reduces risks, maximises quality, improves productivity** and gives your work a kick start
- Reviews with the HW designer
- Large know-how from a wide range of industry customers – e.g. military, windmills and life science
- A process that ensures **quality, speed and reproducibility**

### Some of our references:

#### Windmill Industry

High speed digital signal. Differential pair routing. Routing of DDR2 SDRAM. BGA routing for PowerPC, CPLD and FPGA's. 10 layers PCB. Switch-mode PSU layout. EMC correct layout. Use of customers DMF rules and component libraries. 3D modelling. Exporting of PCB files to Hyberlynx.

#### Chip Manufacturing

Circulated design of 25 identical channels used for testing ASIC prototypes. Low noise design, with purpose of minimizing cross-talk and jitter. Importing of design files to Altium Designer from Orcad Capture.

#### Audio-visual Supplier

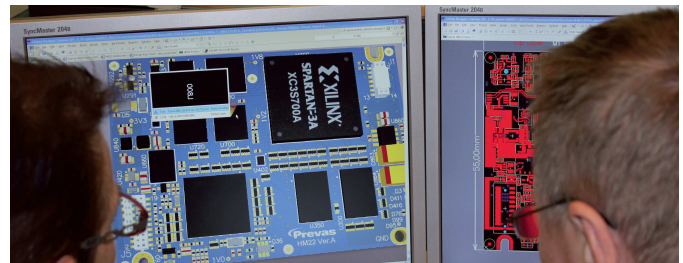
Mix of analog and digital signal. 6 layers PCB. Layout of low noise microphone amplifier. Use of customer specific component libraries. 48V input Switch-mode PSU layout. BGA routing for DSP and FPGA

#### Waste water Surveillance

For MJK A/S. Importing of design files to Altium Designer from Orcad Capture. Compact mechanical constraints, importing of mechanical CAD files. Modem and HF onboard.

#### Test Centre

Mix of analog and digital signal. Use of Prevas' own IPC component database.



### Why do it yourself?

Take advantage of dedicated resources that are highly specialized in one thing – PCB layout

Using PCB layouters that are working on transforming HW designs into producible quality PCBs, full time, gives you several advantages.

- Modern layout is based on extremely **complex tools**, why keeping up to date is a challenging job.
- **Experience** matters when an error-free layout is the goal
- Close and regular contact with **EMS** production gives a smooth production
- **Producibility** of the PCB needs to be designed in from the start and followed up with close contact with the producer

Our PCB layouters will do the work partly or fully at your facilities. And we will gladly use our experience to review your design or PCB layout in terms of functionality, stability, producibility etc.

### Prevas offers...

Prevas offers all services within product development.

At Prevas, the PCB layouters are part of a development organisation that enables us to offer all disciplines for development of embedded products. We support our customers all the way from idea through production, within managing, implementation, test and production. Prevas offers

- An established **development** department with critical mass in all disciplines
- Senior **hardware** and **software** designers within most parts of your design
- An **EMS** department that can help you with production
- **Innovation**, that will help you add value to your product

# PCB Layout

Experience matters

## Board Design Tools and techniques

### Hardware Development and PCB Layout Tools

- Altium Designer
- Altium Protel
- Cadence Allegro PCB Design Expert
- Cadence Allegro Constraint Driven Auto Router
- PCB SI Signal Explore and EMI analyses
- Orcad Layout
- Orcad Capture

### Signal Integrity & EMC Simulation Tools

- Altium Designer
- Mentor Graphics HyperLynx

### Mechanical Design Tools

- Autodesk AutoCAD Mechanical 2005
- Alibre Design (3D)

### Techniques

Prevas PCB layout has experience within the areas needed to produce an innovative PCB.

- Low Noise Switch Mode Power Supply
- Stacked via, micro via, buried via
- HDI (High Density Interconnect)
- EMC design
- Signal Integrity Analysis
- DFM (Design For Manufacturability)
- First-time-right

## High speed design

Prevas has experience with complex designs such as blind/buried/micro vias in

- High Density Interconnect (HDI) and
- High Density Placement (HDP).

Prevas also has excellent experience in integrating Signal Integrity into the PCB design flow.

Prevas Signal Integrity experts will generate PCB Layer customized stackups, routing constraints and topologies for your specific design needs.

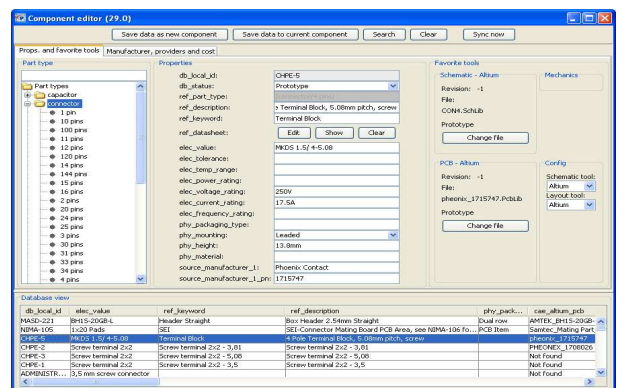
- Layer Stack Impedance Calculation
- Differentials Pairs Routing
- Matched Lengths Routing
- Bus ringing, bounce and xtalk
- Impedance, and timing
- Power Integrity Analysis
- DDR2, FPGA, USB2, LAN



## Component database

Prevas component database can handle Altium, Orcad and Cadence at the same time.

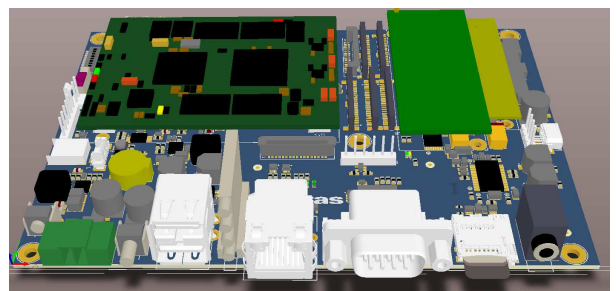
- IPC – 7351B N - Footprints Nominal Level B
- Footprint in 3D
- Component Data Sheet



## Services and processes

Introduction Meeting or e-mail. Schematic issues. Incoming Data. Verification from Altium, Orcad or Cadence. Footprint generation. Mechanical Definitions and 3D input. Critical signal discussion/ definitions. Component Placement and then Review.

Manual Route. Auto Route. EMI Simulation. Signal Integrity Simulation. Design Rule Control. Design for Manufacturing. Validation. Manufacturing Data and Documentation.



## PCB Manufacturing Specification

- All Gerber files are with Embedded RS274X apertures
- STENCIL
- Pick Place file
- NC drill data
- ODB++
- PCB Layer in PDF
- Assembly Drawing in PDF
- 3D Step File
- PCB 3D in PDF
- Board Dimension and Layer stack

For more information please contact: