



JJK-Automaatio Oy



Teuvo Kinnunen

Agenda

Overview

Multisim in Practice

Ultiboard in Practice

PCB milling

Discussions

Design and Simulation Platform



FOR INSTRUCTORS



FOR PROFESSIONALS

NI Electronics Platform for Instructors

Electronics Education Platform

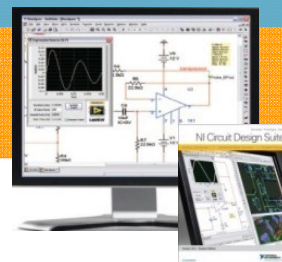
THEORY

Concepts & Textbooks



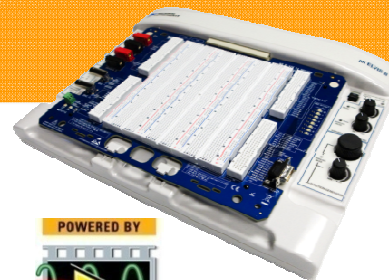
DESIGN

Circuit Capture & Simulation



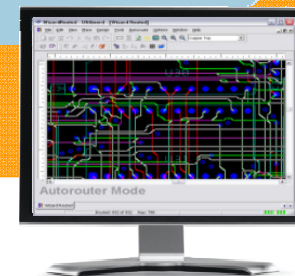
PROTOTYPE

Hands-on Circuit Design

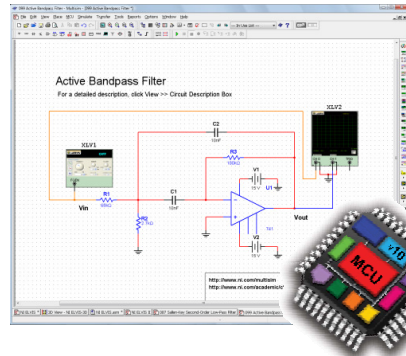


DEPLOY

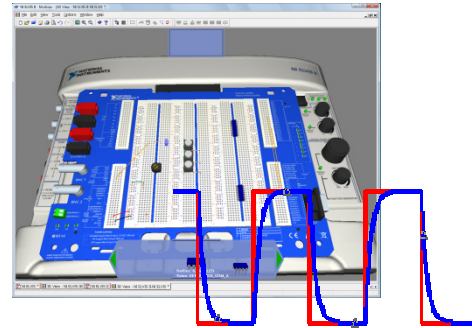
PCB Routing and Layout



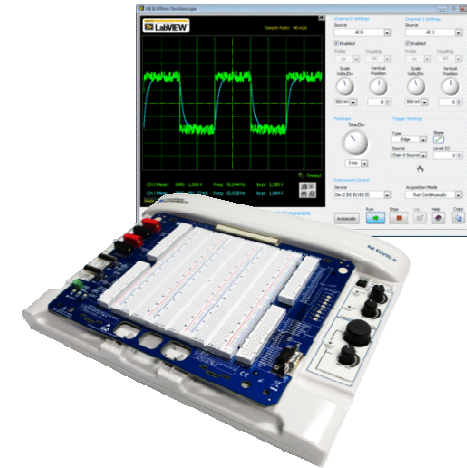
Teaching | Circuit Design Flow



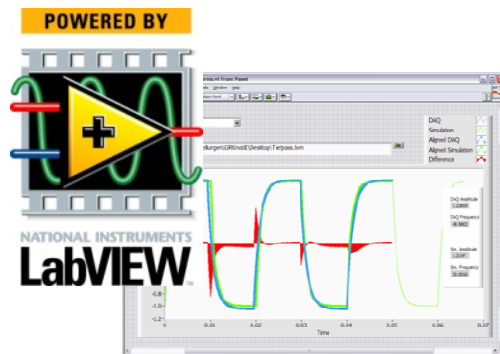
Step 1: Capture, Simulate and improve a design in NI Multisim



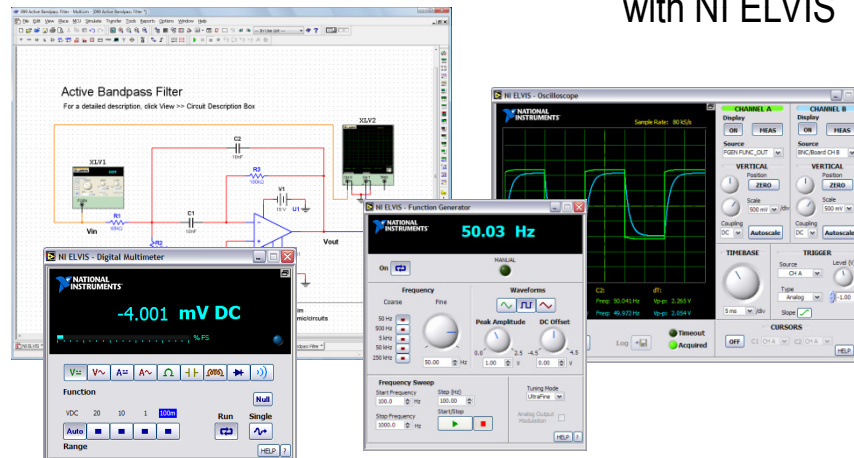
Step 2: Pre-lab in 3D breadboarding environment



Step 3: Build circuit and make measurement with NI ELVIS

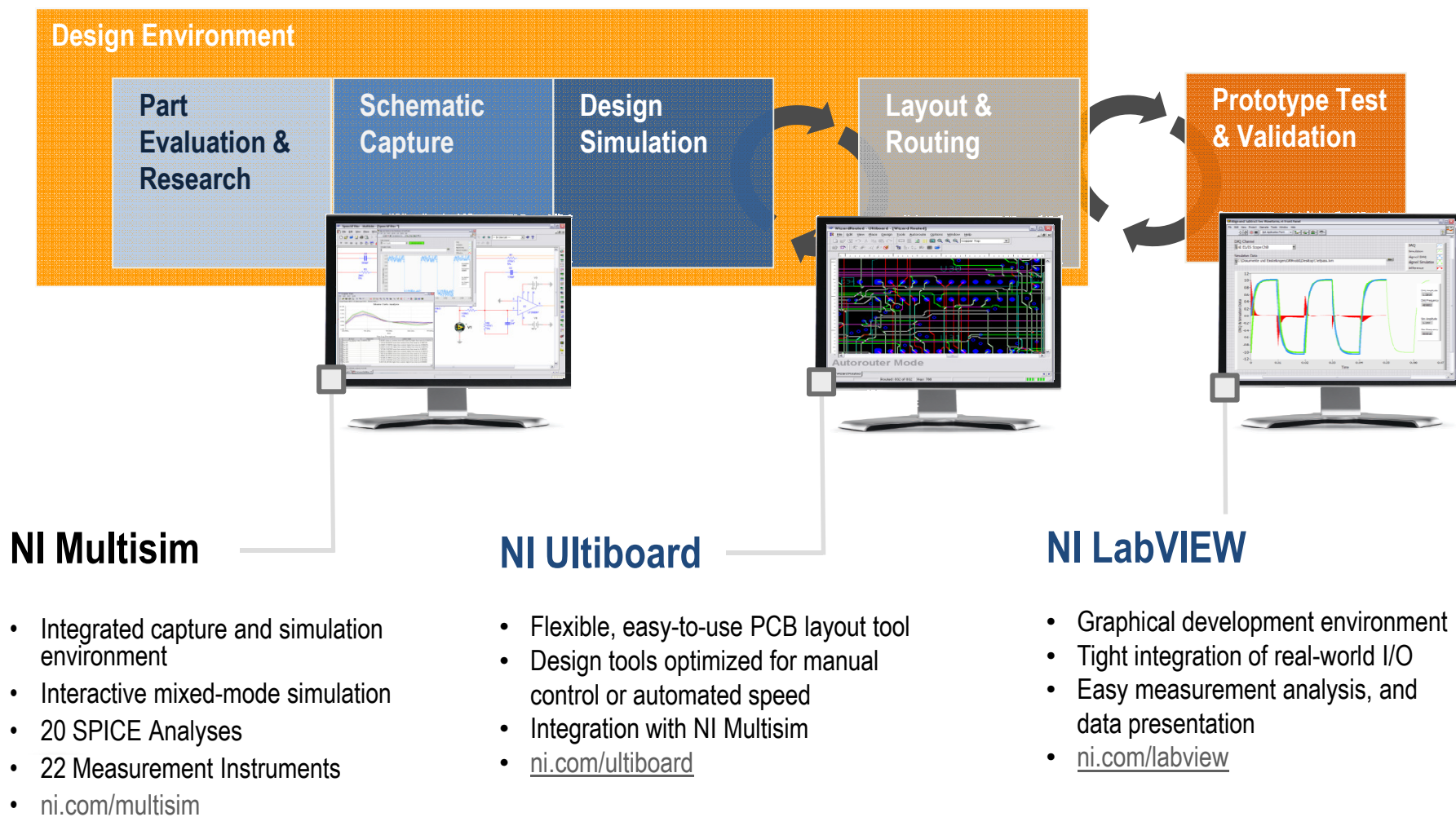


Step 5: Customization and complex analysis with LabVIEW



Step 4. Compare *simulated* data and *real* measurements

NI Electronics Platform for Professionals



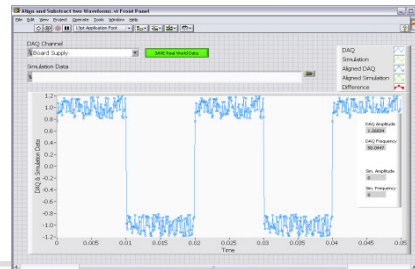
Improving Simulation | Virtual Prototype

Step 1 Create a real signal and connect to LabVIEW

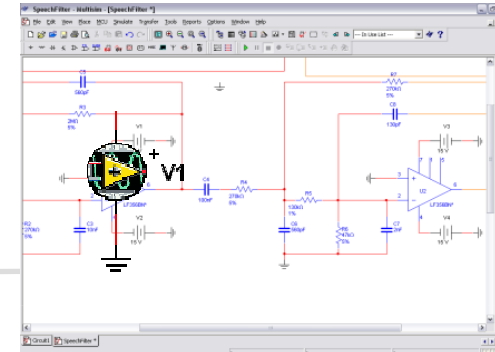


LabVIEW | Measurement

Step 2 Save as signal to the LVM format and transfer to Multisim



Step 3 Simulate in Multisim with a real signal



Step 4 Improve the design in Multisim **BEFORE** prototyping

Design Environment

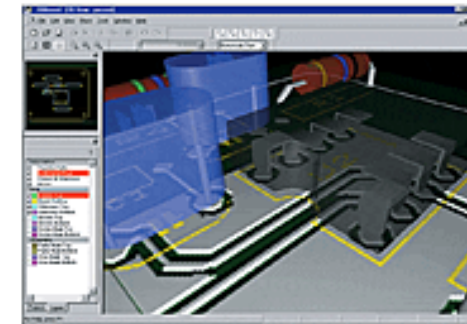
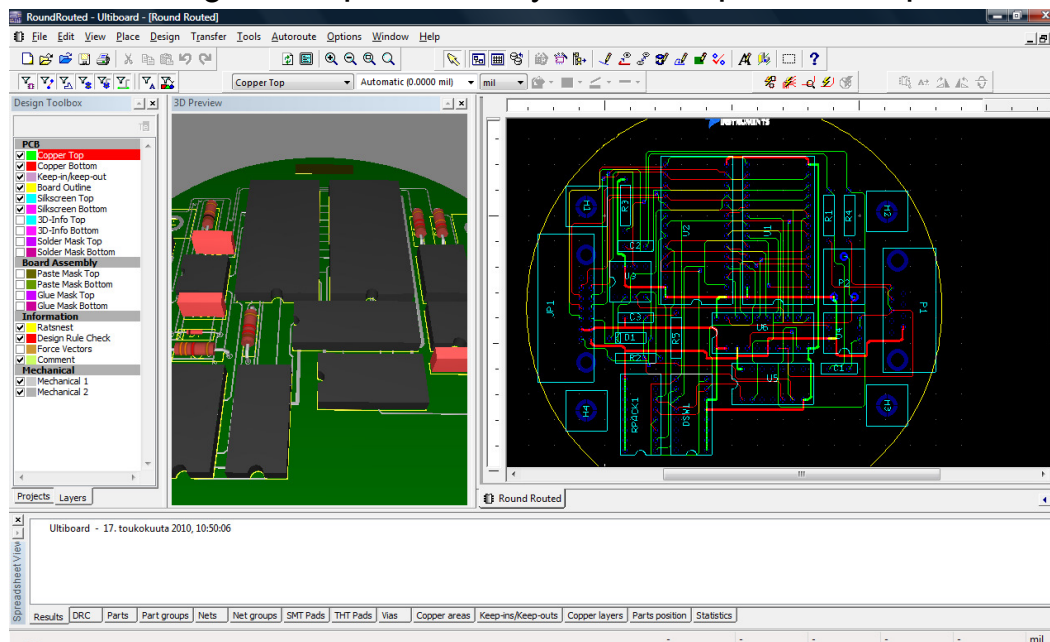
Multisim | Part Evaluation,
Schematic Capture &
Simulation

Ultiboard |
Layout &
Routing

NI Ultiboard

Intuitive PCB Layout and Routing Software for Education

- Prepares students for professional design activities with integrated layout and routing
- Combine with NI Multisim to simplify transfer of designs from schematic to layout
- Helps students produce their first PCBs with pick-and-place components and follow-me routing
- Exports to standard formats including Gerber to give students an understanding of industry practices
- Creates designs of up to four layers with up to 1,000 pins

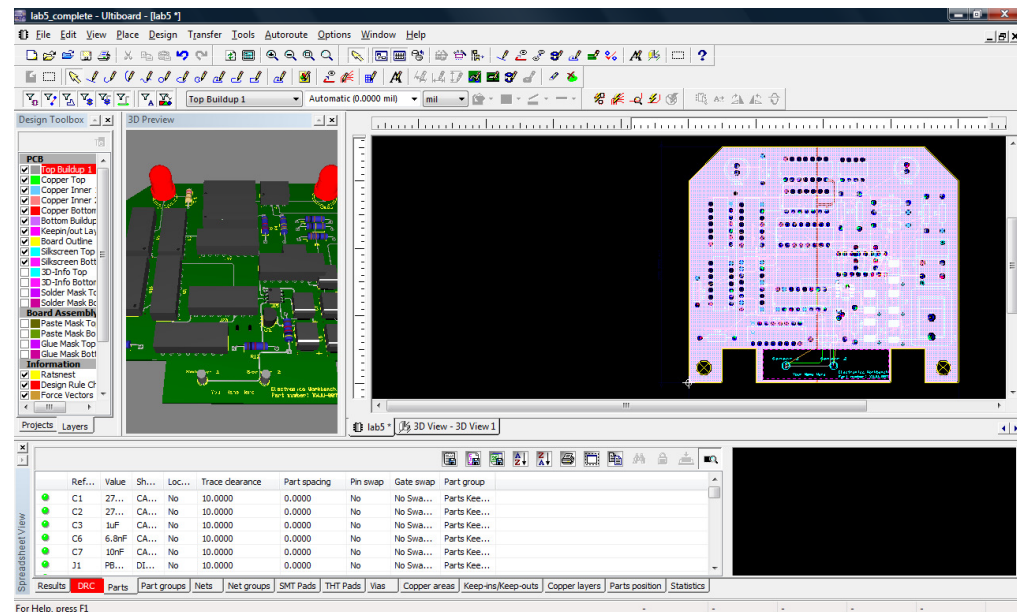


NI Ultiboard

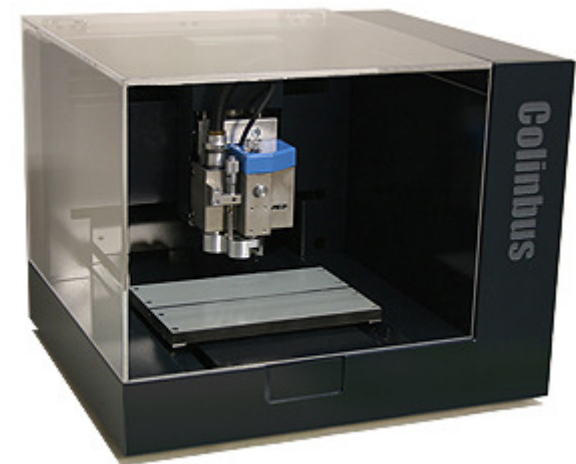
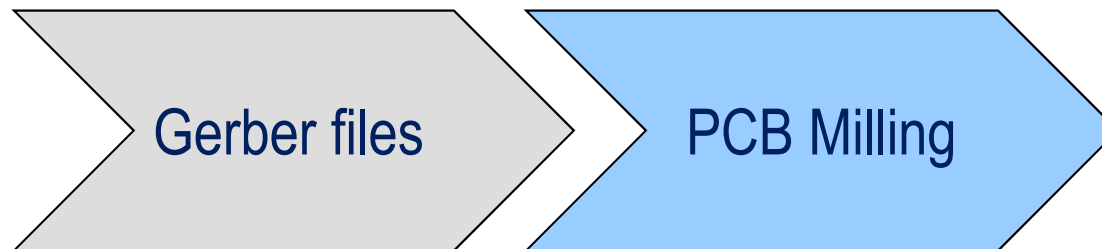
Intuitive PCB Layout and Routing Software for Professionals

- Intuitive, user-friendly layout and routing tools to easily define PCBs
- Flexible environment optimized for accurate or quick part and copper placement
- Seamless integration with Multisim to ensure easy transfer of design iterations
- Easy export to industry-standard Gerber or DXF formats for prototyping and fabrication
- Pin number limit 2000/unlimited
- Creates designs of up to 64 layers

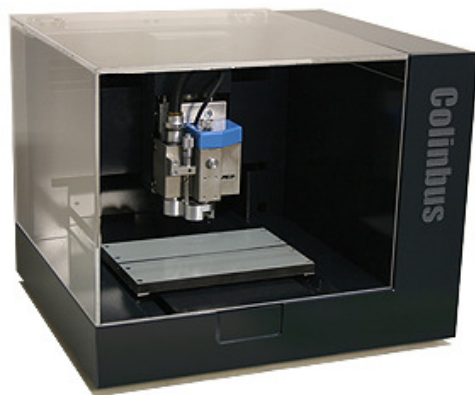
Two versions:
Full
Power Pro



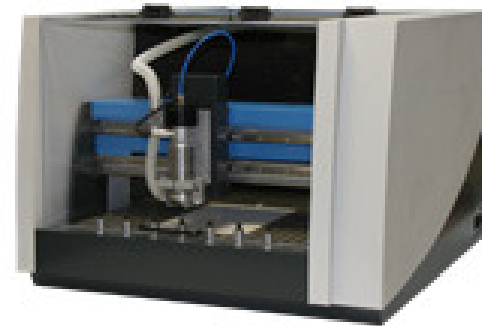
PCB prototyping



Colinbus Milling machines



PCBBox



Laboflex PRO

It's showtime...

MULTISIM in Practice

ULTIBOARD in Practice

PCB Milling

Training courses to whom it may concern

Questions? Discussions

More information

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