

Systems Design Division

XtremePCB
powered by ***AutoActive***[®]

Simultaneous PCB Design

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XtremePCB – What is it?

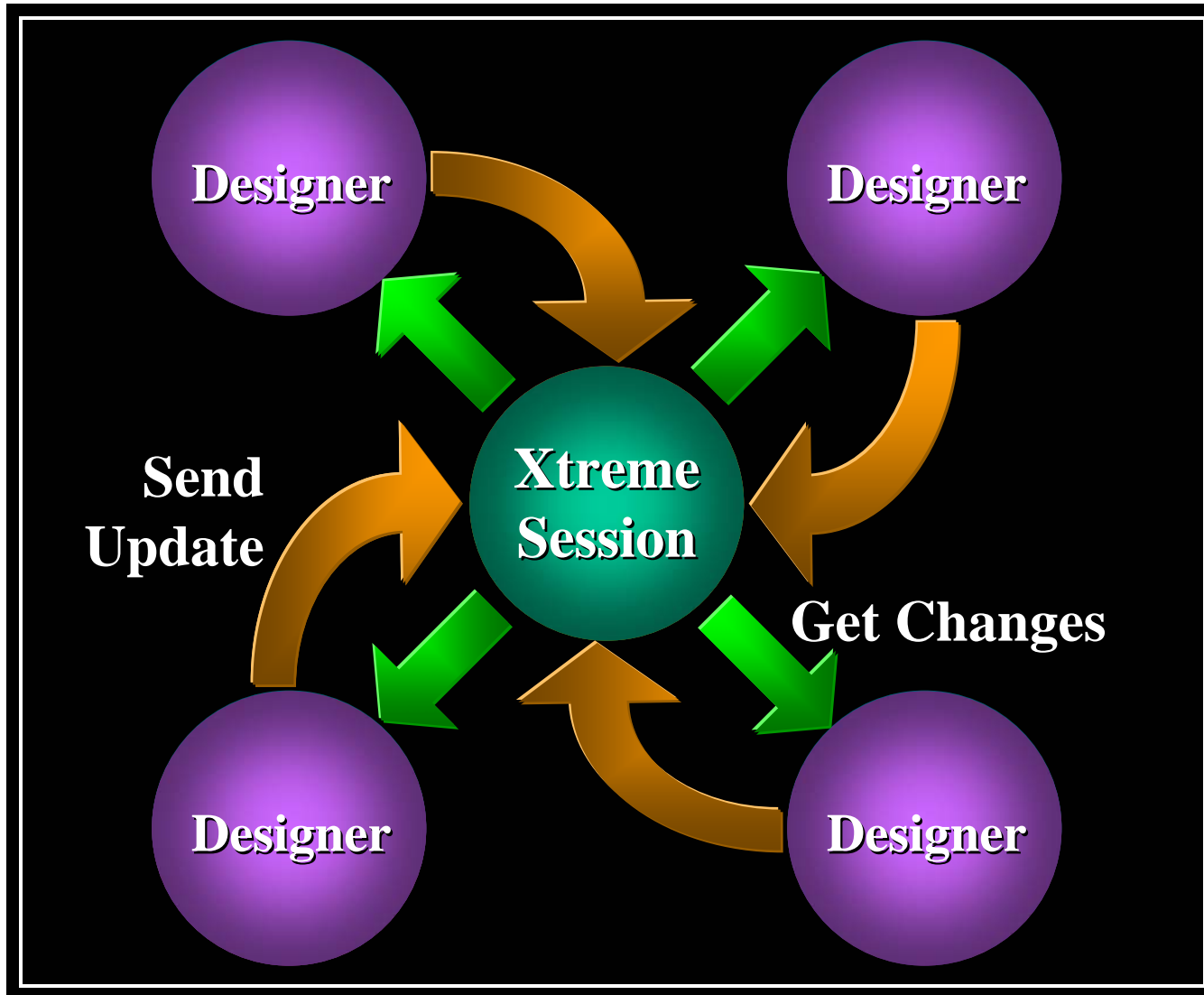
- ✓ **A new paradigm allowing multiple PCB designers to work on a single design simultaneously**
- ✓ **Differs from traditional Team Design and Concurrent Design**
 - **XtremePCB applies to PCB layout tasks only and is not dependent on logical partitioning or design reuse blocks**
 - **It works in conjunction with these other methods; however, part of its value is the independence from rigid pre-defined boundaries or circuits**

**XtremePCB – US Patent Granted
International Patent in Approval Process**

How Is It Different From TeamPCB

- ✓ **TeamPCB should be considered as a “Split & Join” program in which designers work concurrently on the PCB but in their own pre-defined partition.**
 - **The split and join functions are initiated through menu options**
- ✓ **XtremePCB does not require any partitioning and all synchronization is done automatically.**
 - **Every designer can see all other client edits in close to real-time automatically**

XtremePCB – The Basics



XtremePCB

- ✓ **Multiple designers may work on the same design and each change will be automatically checked, merged and then broadcasted to the other clients keeping them synchronized**
 - **Each client has its own CPU and memory space, working on the same design loaded from the server**
- ✓ **Suitable for various environments**
 - **Local Area Networks (LAN)**
 - **Wide Area Network (WAN)**
 - **Wireless (LAN/WAN)**
- ✓ **For all PCB design tasks**
 - **Placement, routing, verification, drafting, manufacturing preparation**

Xtreme Auto Route

- ✓ **The same methodology used for merging interactive client edits and synchronizing them can also be applied if one or more client is an auto router**
 - **Each auto router has its own CPU and memory space and will post routing updates to the server**
- ✓ **The architecture allows a truly effective distributed processing auto route environment**
 - **We analyze the design and schedule unroutes in a number of ways then distribute them to each auto router client to attain the best efficiency**
- ✓ **Status: Control Release with 2004.1 – September 2004**

Skepticism...

- ✓ **When describing XtremePCB the initial reaction is:**
 - **“What happens when two designers want to edit the same object, or one designer pushes a trace in one direction and at the same time another designer does something to block it?”**
 - **“How do you prevent uncooperative designers from destroying each other’s work?”**

Protecting Client Edits

- ✓ **Timing collisions**
 - We automatically resolve timing collisions and edit conflicts through selection priority & DRC - FIFO
- ✓ **Permanent protection**
 - Objects may be locked down with permissions set
- ✓ **Temporary areas**
 - You may draw temporary reserved areas
- ✓ **Verbal interaction with headsets**
 - Using standard network methods
- ✓ **Conflict avoidance**
 - Dynamic “Force Fields” around the cursor prevent editing interference

The Future for Xtreme Architecture

- ✓ **Ultimate flexibility**
 - It doesn't matter if the client is an auto router, simulator or a person
- ✓ **Suitable for complex designs with significant density, signal integrity, and manufacturing concerns**
- ✓ **Other potential applications for the Xtreme architecture**
 - On-line DFM/DFA/DFT checking
 - Simulation driven delay and crosstalk routing
 - Simultaneous enclosure design and interference checking

Changing the Design Paradigm

- v **We are investing in changing new and more productive methodologies**
 - **TeamPCB**
 - **XtremePCB**
 - **Distributed Autoroute**
 - **Xtreme Design Sessions**

Changing the Design Paradigm

- v **TeamPCB**
 - Multiple designers working on the same design semi-independently at the same time in multiple places.
 - Although split/peer-to-peer/join are manually executed, we manage the data automatically.
- v **XtremePCB**
 - Multiple designers working on the same design using the same application at the same time with edits automatically synchronized in real time.
- v **XtremeAR**
 - Production or placement evaluation
 - Using a Grid of computers to AutoRoute.
 - Routes much faster on existing hardware

Changing the Design Paradigm

- √ **Xtreme Design Sessions**
 - **Multiple designers working on the same design using multiple applications with edits automatically synchronized in real time**
 - **Central super-database that receives edits from multiple applications and synchronizes them based on Xtreme technology**
 - **Managing constraints and engineering changes dynamically across the flow**

Summary

**XtremePCB is a new paradigm
enabling the greatest
productivity increase ever in the
history of PCB design**

Indeed a bold statement, but true!

The background is a vibrant blue with a complex pattern of white and light blue lines. These lines form various geometric shapes, including rectangles, circles, and spirals, reminiscent of a circuit board or a data visualization. The overall aesthetic is high-tech and digital.

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