



IBIS QUALITY COMMITTEE UPDATE

PCB_EAST IBIS SUMMIT Oct 21, 2003

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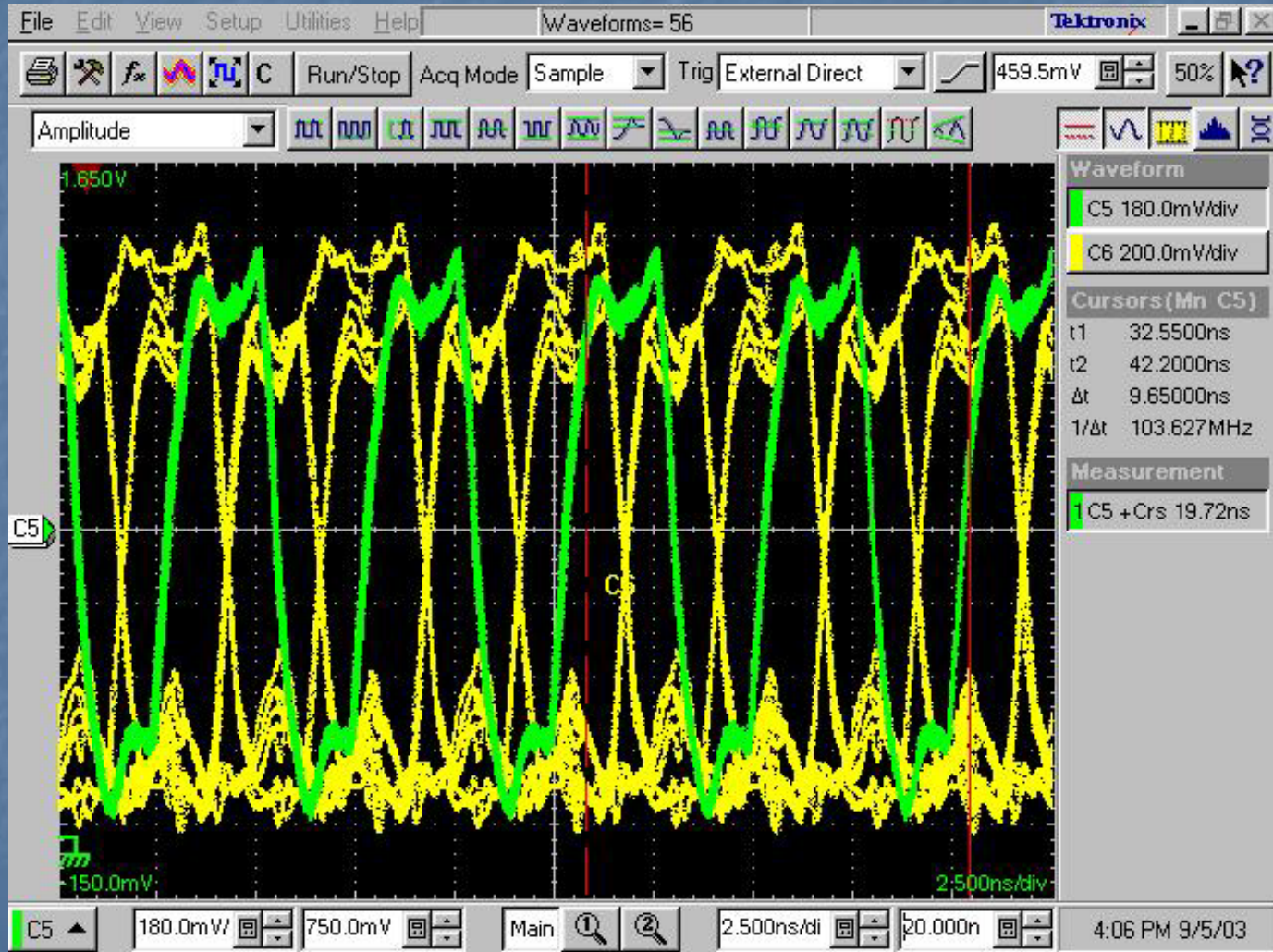
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Quality IBIS Models Imperative



IBIS Quality Subcommittee Group Effort !

- Committee is represented by Semiconductor vendors, EDA vendors, and IBIS end-users.

SiSoft - Barry Katz (Chairman), Robert Haller, Eric Brock, Kevin Fisher

Siemens – Eckhard Lenski, Katja Koller

IBM – Greg Edlund

EMC – Brian Arsenault

Cadence – Lynne Green

Apple – John Figueroa, Kim Helliwell

Mentor – John Angulo, Hazem Hegazy, Sherif Hammad,

Cisco – Mike LaBonte, Todd Westerhoff

Hitachi ULSI Systems – Shoji Kazuyoshi, Nonoyama Sadahiro

Leventhal Design & Communications – Roy Leventhal

Intel – Benjamin Silva

Teraspeed – Bob Ross, Tom Dagostino

AMCC - Peter LaFlamme

Fairchild – Adam Tambone

IBIS Problem Areas

IQ committee belaboured

- C_comp
 - Varies with voltage and frequency
 - Varies for Driver vs. Receiver (I/O cell)
- On Die termination
 - Both Curves Over entire Range (No interpolation)
- Excessive Currents in IV curves
- VT Table “Lead in time”
 - Excessive “lead in” causes over-clocking issues
 - How to specify “excessive dead time”
- VT versus IV crosscheck
- Differential Models with Only Ramps
 - Are 4 curves necessary ?
- SPICE2IBIS
 - creates some of these problems !

IBIS Confusion

Among so called “experts”

- Terminology
 - Corner Conditions Fast Slow versus min and max
- What does IBISCHK Check and limits ?
- C_comp
 - Min Typ Max versus Process Corner
- On Die termination
- Non-Monotonic/Combination of Curves
 - Pull_up and Clamps
 - Pull_down and Clamps
- Package model
 - Vendors translates IBIS models, Added features
 - Lumped versus distributed

IBIS Quality Subcommittee

- Goals
 - Rating system that is easy to understand and adopt
 - Communicate to vendors/users.
 - Cover overall file, component, and model sections
 - Check for completeness, correctness, accuracy
 - Leverage of prior work Meet every 2 weeks (Tuesdays 11:00 EDT for 1 hour)
- Mailing list
 - ibis-quality@freelists.org
 - <http://www.freelists.org/archives/ibis-quality>
- Web Site
 - <http://www.sisoft.com/ibis-quality>

Status and To Do

- **Preliminary Documentation Available**
 - Quality levels
 - Level 0 – Passes IBISCHK (checked by Software)
 - Level 1 – Complete and correct (manual checks)
 - Level 2a, 2b – Correlation: Simulation, Measurement
 - Level 3 – All of the above
 - Reference IBIS Accuracy Handbook
- Need to update IBIS Quality checklist
 - <http://www.sisoft.com/ibis-quality/>
- Submit BIRDS and IBISCHK enhancements
- Final Documentation

Summary

- Quality IBIS models Imperative
- IBIS problems and confusion among “experts”
- Draft Documentation Available !
- Please Review Documentation