JEITA EDA -WG Activity and Study of Interconnect Model

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JEITA EDA-WG
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JEITA ; Japan Electronics and Information Technology Industries Association

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Outlines

1. JEITA EDA-WG Activities
2. Short Term Direction of JEITA EDA WG
3. Study of Interconnect Model
4. JEITA IBIS Model Portal site
1. JEITA EDA-WG Activities

Objectives of JEITA EDA

EDA Model for

Digital Consumer Electronics
Cellular Phone, LCD/PDP TV,
Digital Camera/Video, DVD Recorder
(Digital, RF, and Analog circuits)

Auto Mobile Electronics?
(Motor Drive, EMC)

< Applicability of IBIS V4.1 >
EMI, SI and PI for Digital Consumer Electronics

<Background>

EMI  High-speed Clock Frequency
SI   DDR, PCI, PCI-Express
PI   High density and Large scale IC

SiP and Module, PCB level

EMI, SI and PI Simulation Technology
EDA Model for EMI, SI and PI Simulation

- PCB
- FPC
- RF Modules
- Passive Component (LCR, Filter)
- LSI Model
- IC Chip
- IC Package
- Display device
- Discreet Semicon
- Crystal Oscillator
- Cables
- Connectors

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Focus of EDA Model for Simulation

10 components

- ICs
- RF Modules
- Passive Components (LCR, Filter)
- IC Package
- Discrete Semiconductors
- Crystal Oscillator
- Connectors
- Cables
- PCB
- FPC (Flexible Printed Circuit Board)

EDA Models For Digital Consumer electronics

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JEITA EDA-WG Member

16 Major Companies

Digital Consumer Electronics Supplier

EDA Models

For Digital Consumer electronics

Semicon

TDK Murata

Passive Components

Discrete ICs

Shin Dengen

EDA (internal/vendor)

Fujitsu Mitsubishi Cadence Japan

Connectors

JAE

PCB

CMK Keihin

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2. Short Term Direction of JEITA EDA WG

- Study of Interconnect Model
- IBIS Models of Passive Components and Connector and other Components
- JEITA IBIS Model HP
- Discussion about Case study of Simulation for Digital Consumer Electronics and JEITA-IBIS Joint meeting periodically
3. Study of Interconnect Model

SI Model (Connector, PCB, Cable)

Signal
InfiniBand
RapidIO
DDR
PCI-Express

Waveform measurement point
Connector
Terminator
Passive Component

Cable, FPC

SMA Connector

Signal Generator

JAE (Japan Aviation Electronics Industry)
FI-X Series

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Study of Interconnect Model for Signal Integrity

- Target Application; DDR, PCI-Express etc.
- EDA Model; Connectors, Passive Components, PCB (Via, Pattern), (LSI)
- Simulation Tool; Cadence etc.
SI Model (Connector- Type B; stacked module, PCB, Cable )

Signal
PCI-Express
HyperTransport

Waveform measurement point

Connector

SMA Connector

Signal Generator

WB3 Series

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SI Model (Connector- Type C, PCB, Cable)
SI Model (Connector, PCB, Cable, LVDS)
Simulation Model

Equivalent circuit

Simulation

TML

Measurement

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4. JEITA IBIS Model Portal site Plan

Library

Verification TOOLS

IBIS COOK BOOK

IBIS Model

EMI and SI Simulation

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JEITA IBIS Model Portal Site Contents

- IBIS Documentations
  COOK BOOK
- IBIS Library
  Instruction manual
  IBIS Model Storage rack
- IBIS Training / IBIS E-Learning
- IBIS Free Tool

Support for IBIS Users
IBIS Indicator™ for IBIS Quality Control

By KAW/JAPAN www.kaw.co.jp

Indicate IBIS

Output Current

Reference Voltage

Rise/Fall Speed

Validate IBIS

Error

Warning

Before

Automatic Correction

Correction IBIS

After

Indicate Signal Wave

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Thank you for all the help

EIA/IBIS Committee!