IBIS Model as De-Facto Standard

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Prologue

When do you do SI simulation by using same IBIS model but different SI simulators, do you think the results will be same?

I did an experiment.
The experiments.

Using Same circuit

F = 530MHz
R = 100Ω
Zo = 40Ω
Length = 0.2mm
The experiments.

Different SI simulators

Using
Same IBIS

Compare the Results
Compare point

Compare the voltage of cross point

900ps@0.75V
The Results

<table>
<thead>
<tr>
<th>SI simulator</th>
<th>Cross Point Voltage</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>600 mV</td>
</tr>
<tr>
<td>B</td>
<td>730 mV</td>
</tr>
<tr>
<td>C</td>
<td>620 mV</td>
</tr>
<tr>
<td>D</td>
<td>750 mV</td>
</tr>
<tr>
<td>E</td>
<td>764 mV</td>
</tr>
<tr>
<td>F</td>
<td>705 mV</td>
</tr>
</tbody>
</table>

The results are all different
The Results

Simulator A

Simulator B

Simulator C

Simulator D
The Results

All of 6 simulator’s results are different!!

(MAX 160mV difference)
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What can I believe?
We are in era of

Can get IBIS model easily
Can trust IBIS model

Many Thanks for JEITA

**IBIS Quality Framework**
But, 
In order to use IBIS model as real *de-facto standard*,

Now, we may need to have

The quality framework for SI simulators
The quality framework for SI simulators

Reference
IBIS

Reference Result

Comparing Check

Authoritative Result

SI simulators
Many thanks for helping to do the experiment.

IBITECH Co., LTD
BOARD TECHNOLOGY Ltd
TOWA Electronics Co., Ltd
Cedar-Creek Co., Ltd
Xpeedic Technology, Inc.
Epilogue

I did another experiment.

Same IBIS and same SI simulator but different Engineer.

The result was…….
The result was......

Different!

Engineer Mr. A

Engineer Mr. B

Engineer’s skill makes the result difference
Today, IBIS model is getting to be real de-facto standard.

   Every body can get good IBIS.

   So many engineers (From beginner to expert) are using IBIS model.

But, SI simulator is not magical tool yet.

   It still depends on engineer’s skill.

We need

   • GOOD IBIS and GOOD TOOL
   • GOOD Engineer and GOOD support.