IBIS Summary Documents

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(updated from Nov. 15, 19, 22, 2013)
Document Samples

• Keyword Hierarchy tree in IBIS Version 6.0, Section 3.1
• Expanded Keyword Hierarchy tree
• Evolution document
• IBIS-AMI parameter tables in IBIS Version 6.0, Section 10.7
• These documents summarize the IBIS elements
Unofficial Keyword Hierarchy
Updated from September, 2007

• Keyword Hierarchy tree
  – 165 distinct keyword usages
  – Some keywords are re-used in different contexts (e.g., [IBIS Ver], [End], [Rising Waveform], etc. in .ibs, .pkg and .ebd files)

• Hierarchy documents updated with Version 5.1 and Version 6.0 information
Unofficial Keyword Hierarchy Tree with Extra Information

(ml): multiple locations for [Comment Char]

(m): multiple times

(x.y): when added at major version [1.1 (blank), 2.1, 3.2, 4.2, 5.1, 6.0]

(*): choices or selections given at end
For example, IBIS-ISS added as a Language choice in Version 6.0

polarity added to D_to_A with Non_Inverting and Inverting selections in Version 6.0
Unofficial Evolution Document

• Evolution document features:
  – Updated columns show major version evolution
  – Rules and changes evolution
  – Significant subparameter selections such as the *_type subparameter choices

• Hierarchy and Evolution documents contain overlapping information, but expanded Hierarchy document has more detail

• Sample page shown next
## Test data type and Test load type SELECTIONS

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Single-ended</td>
<td></td>
<td>Differential</td>
</tr>
</tbody>
</table>

### Model emi type SELECTIONS

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Ferrite</td>
<td></td>
<td>Not_a_Ferrite</td>
</tr>
</tbody>
</table>

### (SUBPARAMETERS) FOR OTHER KEYWORDS

<table>
<thead>
<tr>
<th></th>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>[Component]</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>[Package]</td>
<td>[Pin]</td>
<td></td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- [Component]
  - Si_location
  - Timing_location

- [Package]
  - R_pkg
  - L_pkg
  - C_pkg

- [Pin]
  - signal_name
  - model_name
  - model_name.R_pin

- [Pin EMI]
  - domain_name
  - clock_div

- [Pin Domain EMI]
  - percentage

- [Begin EMI Component] KEYWORDS

- [Pin EMI]

- [Pin Domain EMI]
Parameter Syntax (Section 10.3)

(<parameter_name>)
(Usage <usage>) | required
(Type <data_type>) | required
({Format} <data_format> <data>) | required *

(List_Tip) | optional with ({Format} List)
(Default <value>) | optional or illegal *
(Description <string>) | optional
)

* Value or Default, but not both, and other rules
New - Four Summary Tables in Section 10.7 of the Specification

• **Usages for** Reserved Parameters
• **Types for** Reserved Parameters
• **Formats for** Reserved Parameters
• **Types for** Format values
• **28 Reserved Parameters**, 18 new in Version 6.0
• Part of one table shown next
### IBIS-AMI Reserved Parameters and Allowable Data Types

Table 31 – Allowable Data Types for Reserved Parameters

<table>
<thead>
<tr>
<th>Reserved Parameter</th>
<th>Data Type</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Float</td>
</tr>
<tr>
<td>AMI_Version(^1)</td>
<td>X</td>
</tr>
<tr>
<td>DLL_ID(^3)</td>
<td></td>
</tr>
<tr>
<td>DLL_Path(^3)</td>
<td></td>
</tr>
<tr>
<td>GetWave_Exists</td>
<td></td>
</tr>
<tr>
<td>Ignore_Bits(^2)</td>
<td>X</td>
</tr>
<tr>
<td>Init_Returns_Impulse</td>
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</tr>
<tr>
<td>Max_Init_Aggressors</td>
<td>X</td>
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<tr>
<td>Repeater_Type(^3)</td>
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</tr>
<tr>
<td>Rx_Clock_PDF</td>
<td>X</td>
</tr>
<tr>
<td>Rx_Clock_Recovery_DCD(^3)</td>
<td>X</td>
</tr>
<tr>
<td>Rx_Clock_Recovery_Dj(^3)</td>
<td>X</td>
</tr>
<tr>
<td>Rx_Clock_Recovery_Mean(^3)</td>
<td>X</td>
</tr>
<tr>
<td>Rx_Clock_Recovery_Rj(^3)</td>
<td>X</td>
</tr>
<tr>
<td>Rx_Clock_Recovery_Sj(^3)</td>
<td>X</td>
</tr>
<tr>
<td>Rx_DCD(^3)</td>
<td>X</td>
</tr>
<tr>
<td>Rx_Dj(^3)</td>
<td>X</td>
</tr>
<tr>
<td>Rx_Noise(^3)</td>
<td>X</td>
</tr>
</tbody>
</table>
Conclusion

• Summary information provides quick references for IBIS and IBIS-AMI syntax

• Document references

  http://www.eda.org/ibis/ver6.0/
  ver6_0.docx, .pdf  (official specification)
  tree_6_0.txt  (unofficial)
  evol_6_0.docx, .pdf  (unofficial)