

Update on BIRD223.1: Add Support for SPIM in IBIS



Approved on November 17, 2023

SPIM = **Streamlined** Power Integrity Model

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Kinger leads AI PC coherent architecture strategy in mobile platforms and drives strategic platform EDA tools & algorithms evolution in Intel. Kinger obtained Ph. D from Shanghai Jiao Tong University in 2001, and achieved MBA degree from W.P. Carey business school in ASU in 2008. Kinger has focused on signal & power integrity domains for 20+ years. Kinger holds 14 granted patents, and published 30+ papers.

Executive Summary

Summary:

- Corrected editorial typos, updated terminology and descriptions related to [Device SPIM], including refining the "S" to "streamlined" in SPIM, and simplified the addition of [Device SPIM Group] and [End Device SPIM Group] in the "tree" structure of .ibs files, while addressing minor errors and formatting.

Timeline:

- BIRD223 submitted on March 7, 2023, and approved on July 14, 2023
- BIRD223.1 submitted on Sep. 12, 2023, and approved on Nov. 17, 2023

BIRD223.1 Update -1

- 1) Corrected the over-sighted editorial typo error of [Device Model] to [Device SPIM].

Keyword: **[Manufacturer]**

Required: No.

Description: Specifies the name of the ~~[Device Model]~~[Device SPIM] manufacturer.

Usage Rules: The length of the manufacturer's name shall not exceed 40 characters, while blank characters are allowed.

Example:

[Manufacturer] MyName Corp.

BIRD223.1 Update -2

- 1) Corrected the over-sighted editorial typo error of [Device Model] to [Device SPIM].
- 2) Updated [Device SPIM] to “Required in a .spim file, illegal in a .ibs file” in Table 2.

Keywords or subparameters	Notes
[Device SPIM Group]	Optional in a .ibs file, illegal in a .spim file
[Device SPIM]	Optional in a .ibs file, required <u>Required</u> in a .spim file, <u>illegal in a .ibs file</u>
[Manufacturer]	Optional within any [Device SPIM]

BIRD223.1 Update -3

- 1) Corrected the over-sighted editorial typo error of [Device Model] to [Device SPIM].
- 2) Updated [Device SPIM] to “Required in a .spim file, illegal in a .ibs file” in Table 2.
- 3) Simplified the description by eliminating the redundancy and updated for keyword: [Device SPIM], according to item#2.

Keyword: **[Device SPIM]**

Required: No, but it is required in a .spim file.

Description: Marks the beginning of device level SPIM for a particular device or module. **The [Device SPIM] keyword is only defined once in a .ibs file or in a .spim file.**

Usage Rules: The [Device SPIM] keyword accepts a single string argument which is a **deviceDevice** SPIM name. This string argument shall be no longer than 40 characters and shall not include whitespace.

The [Device SPIM] / [End Device SPIM] keyword pair shall appear only once in a .spim file for one **particular** device or module. **The device, with a unique Device SPIM name in a given .spim file shall be unique.**

All content, **defined between [Device SPIM] and [End Device SPIM] keyword pair in a .spim file,** shall **be able to not** be copied **and/or** inserted into a .ibs file of the same [Component] **or being**], **instead should be called by Device SPIM name** between the [Device SPIM Group] **and** [End Device SPIM Group] keyword pair in a .ibs file.

BIRD223.1 Update -4

- 1) Corrected the over-sighted edit
- 2) Updated [Device SPIM] to “Re
- 3) Simplified the description by el
[Device SPIM], according to ite
- 4) Updated the description and
example of the keyword
[Device SPIM Group],
according to item#2.

Keyword: [Device SPIM Group]

Required: No, but it is required for including an SPIM model in a .ibs file.

Description: In a .ibs file, a selector under [Component] to select the device SPIM models, which are ~~either directly included in the same .ibs file or~~ in a separate .spim file. In a .ibs file, the [Device SPIM Group] keyword is permitted multiple times.

The [Device SPIM Group] keyword is used to define a list of [Device SPIM] models by name that shall be used together for all concerned power rails of one particular configuration on a platform.

Usage Rules: The [Device SPIM Group] keyword accepts a single string argument, which is device SPIM group name. The string argument shall be no longer than 40 characters and shall not include whitespace.

For each existing [Device SPIM Group], there are usually two columns. The first column lists the Device SPIM name uniquely in string argument one by one, each of them shall be no longer than 40 characters and shall not include whitespace. ~~The second column is “NA”, if the referred Device SPIM model is defined in the same .ibs file. Otherwise, the~~The second column refers to the relevant .spim file name, either in the same folder of the local .ibs file or a spim_folder, a subfolder underneath the folder where the local .ibs file is located, will be specified.

Example:

```
[Device SPIM Group]   Group_name_1           | selector under [Component]
| ...
Device_SPIM_name_1   -NA-----| if it is in the .ibs file
Device_SPIM_name_2   -NA-----| if it is in the .ibs file
| ...
Device_SPIM_name_3   spim_folder/file_name_1.spim | if it is in a .spim file.
| ...                                                         RELATIVE to the .ibs file
| ...
[End Device SPIM Group]
```

BIRD223.1 Update -5

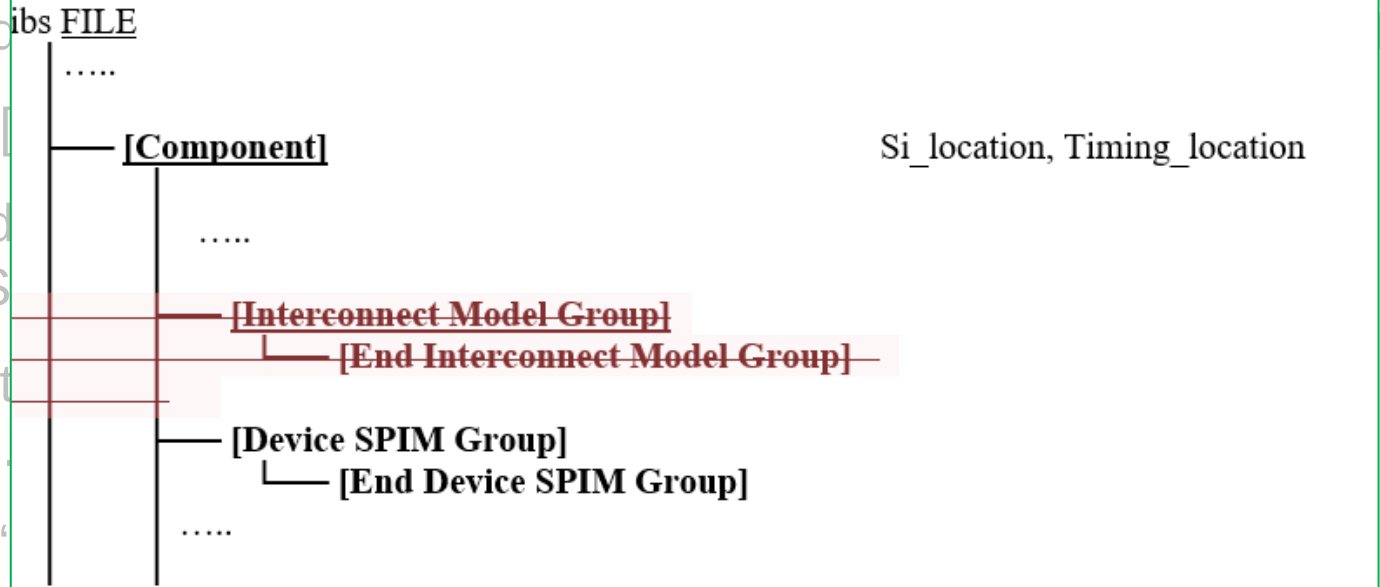
- 1) Corrected the over-sighted editorial typo error of [Device Model] to [Device SPIM].
- 2) Updated [Device SPIM] to “Required in a .spim file, illegal in a .ibs file” in Table 2.
- 3) Simplified the description by eliminating the redundancy and updated for keyword: [Device SPIM], according to item#2.
- 4) Updated the description and example of the keyword [Device SPIM Group], according to item#2.
- 5) Updated “standard” to “streamlined” for the “S” in SPIM.

Requirements	Notes
To enable platform level PI design with SPIM using published platform PI design architectures, the IBIS specification is extended to define the Standard <u>Streamlined</u> PI Model (SPIM).	

BIRD223.1 Update -6

Add to ibs FILE [Device SPIM Group] under [Component] ~~after [Interconnect Model Group]:~~

- 1) Corrected
- 2) Updated
- 3) Simplified
- 4) Updated
- 5) Updated



- 6) Simplified description for adding [Device SPIM Group] & [End Device SPIM Group] keyword pair, into the “tree” of .ibs file.

Device SPIM].
le” in Table 2.
d for keyword:
Group], according

BIRD223.1 Update -7

- 1) Corrected the over-sighted editorial typo error of [Device Model] to [Device SPIM].
- 2) Updated [Device SPIM] to “Required in a .spim file, illegal in a .ibs file” in Table 2.
- 3) Simplified the description by eliminating the redundancy and updated for keyword: [Device SPIM], according to item#2.
- 4) Updated the description and example of the keyword [Device SPIM Group], according to item#2.
- 5) Updated “standard” to “streamlined” for the “S” in SPIM.
- 6) Simplified description for adding [Device SPIM Group] & [End Device SPIM Group] keyword pair, into the “tree” of .ibs file.
- 7) Corrected some minor editorial typo errors & wording format.

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