



IBIS File Inspection Using **ibisinf** a basic utility for the 80/20 rule

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Overview of **ibisinf**

- Command line tool introduced in 2001
 - Donated to the community and available for free from <http://www.eda.org/ibis/tools/>
- Based on IBIS Golden Parser
 - Currently version 5.1.4 (latest available version)
- Supports Windows and Linux
- Checks syntax and semantic equal to ibischk
 - Limited to .ibs-files

Operation of **ibisinf**

- Command Syntax

```
ibisinf <file>.ibs [-c [comp,...]] [-m [model,...] [-t [-d dc]]]
```

<code>-c [comp,...]</code>	displays all or named components
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<code>-m [model,...] [-t [-d dc]]</code>	displays all or named models use <code>-t</code> to dump tables and <code>-d</code> to choose delimiter character for values in tables
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- The IBIS Golden Parser is called on the file on invocation
 - Information, warnings, and errors are issued as generated by the IBIS Golden Parser
 - If called without arguments just the IBIS Golden Parser is run on the specified file

Example Component Inspection

- Command line:

```
ibisinf example1.ibs -c
```

- Output:

Component name and manufacturer

Number of pins

Pin statistics

Number of models

List of models including model types

Package name

```
Component: XYZ0123
Manufacturer: Fabulous Semi Inc.
```

```
#Pins: 48
```

```
#Modeled Pins: 36
```

```
#Supply Pins: 12
```

```
#Other Pins: 0
```

```
#Models: 3
```

```
Model: DATA_IN1 (Input)
```

```
Model: DATA_OUT (Three State)
```

```
Model: DATA_IN2 (Input)
```

```
Package: TQFP48
```

Example Output Model Inspection

- Command line:

```
ibisinf example1.ibs -m DATA_OUT
```

- Output:

Model: DATA_OUT
Type: Three State
Polarity: Polarity not set
C_comp: 1.82e-012F; ...
Voltage Range: 3.3V; 3.0V; 3.6V
Vmeas: 1.6V
Cref: 5e-11F
Rref: 10kOhm
Vref: 0.0V

Static Char.: GND_Clamp; POWER_Clamp; Pullup; Pulldown
Rising dV/dt: 2.34/6.35e-10; 1.81/5.86e-10; 2.64/6.31e-10
Falling dV/dt: 2.89/7.59e-10; 2.61/1.18e-09; 3.17/5.67e-10
Rising Wvf. 1: R_fix=250Ohms; V_fix=0.0V, 0.0V, 0.0V;
Falling Wvf. 1: R_fix=250Ohms; V_fix=5.0V, 4.5V, 5.5V;

Model name

Model type

Polarity

C_comp

Voltage range

Test load and
timing parameters

Static characteristics

Ramp data and waveforms

Example Input Model Inspection

- Command line:

```
ibisinf example1.ibs -m DATA_IN1
```

- Output:

Model: DATA_IN1
Type: Input
Polarity: Polarity not set
Enable: Enable not set
Vinl: 0.8V
Vinh: 2.0V
C_comp: 1.82e-012F; ...
Voltage Range: 3.3V; 3.0V; 3.6V
Vmeas: -
Cref: -
Rref: -
Vref: -
Static Char.: GND_Clamp; -; -; -

Model name

Model type

Polarity and Enable

Thresholds

C_comp

Voltage range

Test load and
timing parameters

Static characteristics

Example Table Extraction

- Command line:

```
ibisinf example1.ibs -m DATA_OUT -t > data_out.csv
```

- Output:

```
IBISINF V1.0.3
```

```
...
```

```
Checking example1.ibs for IBIS 4.0 Compatibility...
```

```
NOTE (line 960) - Pullup Minimum data is...
```

```
NOTE - Combined Pullup for Model:...
```

```
Errors : 0
```

```
File Passed
```

```
Model: DATA_OUT
```

```
...
```

```
GND_Clamp curve:
```

```
V          A (typ) A (min) A (max)
```

```
-3.3      -0.00021283   -8.2784e-08  -0.022353
```

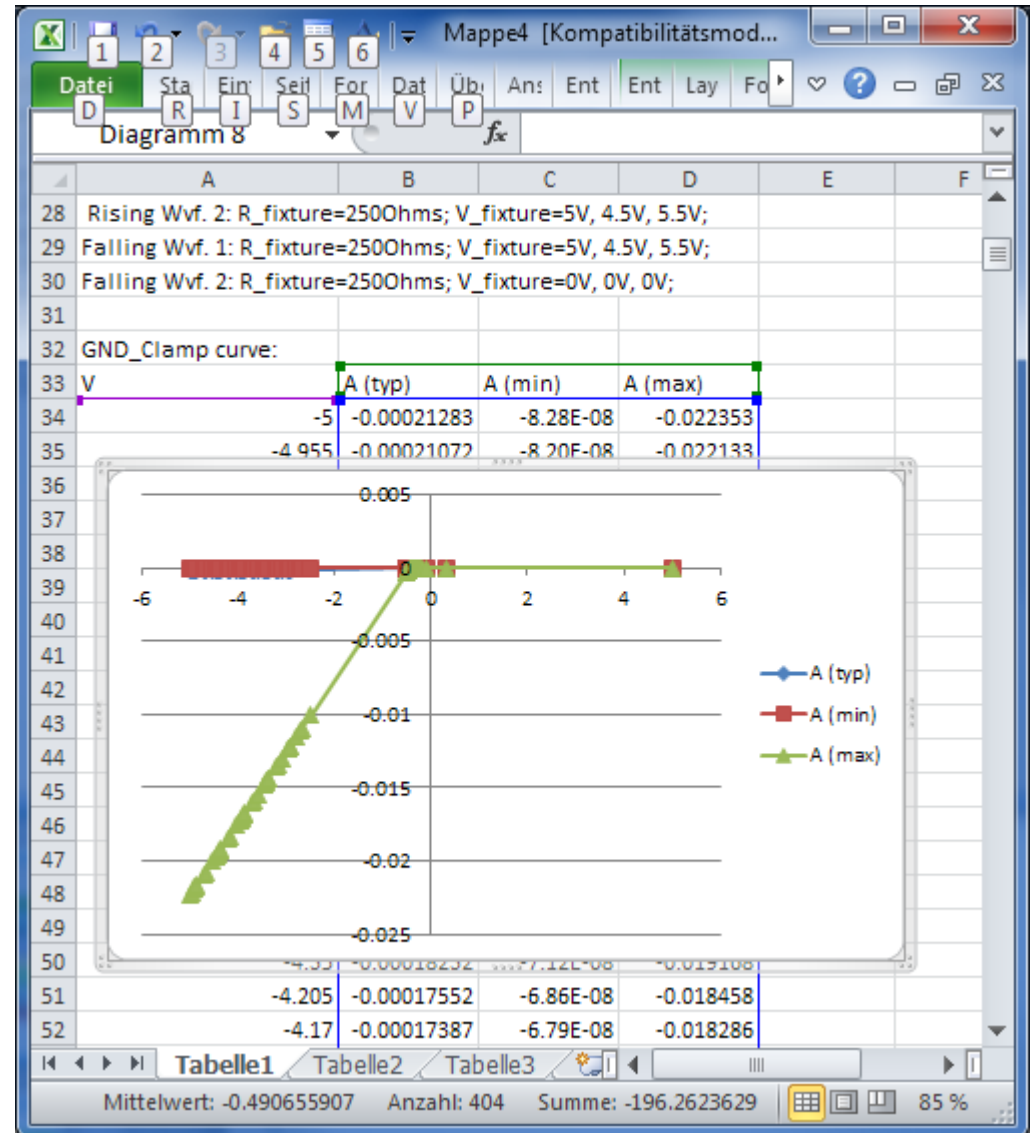
```
-3.28     -0.00021072   -8.1978e-08  -0.022133
```

```
...
```

Example Table Extraction

Cont'd

- Quick model data representation in spreadsheet application
- Model data inspection
- Model data correction and manipulation
- Model documentation



Potential Improvements

- Improve output of model data
- Output of component pins
 - List or table
- Output of package data
 - RLC pin data
 - External package
 - List or table
- Support of AMI models
 - Output parameters
 - List or table
- Merge **ibisinf** with **ibischk**
 - No need for two tools
 - Possible with reasonable effort (from Zuken)
 - Requires agreement of the IBIS Open Forum

Summary

ibisinf

- Command line utility for .ibs-files
- Allows quick overview of legacy IBIS
 - IBIS Standard compliance
 - Check of pin-out
 - Modeling status and completeness
- Enables more detailed model inspection quickly
 - By means of standard office tools
- Supports component and model documentation
 - By means of standard office tools
- Freely available from
<http://www.eda.org/ibis/tools/>