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

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(Presented by Bob Ross, Teraspeed Consulting Group)

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

- Command Syntax

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

`-c [comp,...]`	displays all or named components
`-m [model,...] [-t [-d dc]]`	displays all or named models use `-t` to dump tables and `-d` to choose delimiter character for values in tables

- 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: 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
```

Component name and manufacturer

Number of pins

Pin statistics

Number of models

List of models including model types

Package name

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
```
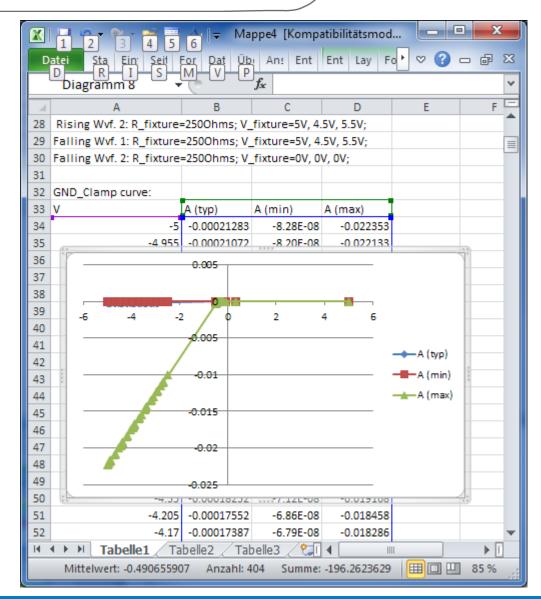
```
        Model: DATA_OUT
   ...
GND_Clamp curve:
V      A (typ) A (min) A (max)
-3.3   -0.00021283   -8.2784e-08  -0.022353
-3.28  -0.00021072   -8.1978e-08  -0.022133
   ...
```

- 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

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/