AIF (SINGLE DIE) NETLIST FORMAT

Download Unisem Netlist Template

The standardization of the single die design netlist format will enable Unisem designers to directly import the netlist in to the design database without manipulation. The benefits of utilizing this format are:

1. Reduce design cycle time by eliminating the need for netlist and die coordinate file formatting. The die and netlist connectivity will be created simultaneously and reduce database preparation time.
2. Eliminate the chance for netlist formatting errors. If the netlist is properly formatted, there will be no requirement for netlist manipulation in order to comply with required netlist format.
3. The netlist file can be verified and the die can be viewed with the AIF file viewer created by Artwork Conversion Software (ACS). The free AIF file viewer can be downloaded from the ACS website at Downloading AIFVU.

Customer determined netlist variables are highlighted in **RED**.

[DATABASE]

This section enables the design software to determine the AIF file format, the file version and the units of the coordinates and component dimensions.

[DATBASE]
TYPE=AIF
VERSION=2.0
UNITS=**UM** (Valid options are um, micron, mm, cm, in, inch, mil)

[DIE]

This section describes the width and height of the die and a name for the die. Width is measured along the X coordinate and Height is along the Y coordinate. The width and length are the nominal scribed dimensions. The NAME and THICKNESS are optional.

WIDTH=**5576.00**
HEIGHT=**5613.00**
NAME=**YOURDEVICE**
THICKNESS=**80**

[PADS]

The PADS section defines pads needed for the die and package. Pads can have any of the following shape types: Square, Rectangular, Oblong, Circular and Polygon. See page 3 for proper syntax.

[PADS]
DIEPAD=**SQ 50**
BALL=CIRCLE 780

[NETLIST]

The netlist is the intelligence behind the design. This section defines the signal name, die pad number, shape of die pad, X/Y coordinate of the die pad and the package ball assignments.

Note: The netlist format does not support multiple die in one package.

AIF NETLIST EXAMPLE

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[DATABASE]
TYPE=AIF
VERSION=2.0
UNITS=UM

[DIE]
WIDTH=5576.00
HEIGHT=5613.00
NAME=YOURDEVICE

[PADS]
DIEPAD50=SQ 50
BALL=CIRCLE 780

[NETLIST]					
;NETNAME	PAD#	TYPE	PAD_X	PAD_Y	BALL#
Net1	1	DIEPAD50	-3995	3944.8	C4
Net2	2	DIEPAD50	-3995	3805.8	C5
POWER	3	DIEPAD50	-3995	3669	-
Net4	4	DIEPAD50	-3995	3534.3	B4
Net5	5	DIEPAD50	-3995	3401.5	A4
Net6	6	DIEPAD50	-3995	3270.7	C5
GROUND	7	DIEPAD50	-3995	2888.8	-
:	:	:	:	:	:
POWER	279	DIEPAD50	-3021.4	4266	-
Net280	280	DIEPAD50	-3148.6	4266	D1
Net281	281	DIEPAD50	-3277.7	4266	D2
GROUND	282	DIEPAD50	-3408.8	4266	-
Net283	283	DIEPAD50	-3542	4266	E4
Net284	284	DIEPAD50	-3677.4	4266	D3
GROUND	-	-	-	-	V1
GROUND	-	-	-	-	V20
POWER	-	-	-	-	A1
POWER	-	-	-	-	A2
NC1	-	-	-	-	-
NC2	-	-	-	-	-

Placeholder
If a particular data item is not present, the dash (-) should be used as a placeholder since the parser counts the number of entities per line to determine the context of the data.

Delimiter
Data items can be delimited by one or more spaces or a tab. Please do not use commas or colons.

Comment
The semicolon (;) indicates a comment. Anything after a semicolon is ignored. Good practice demands that at the top of the netlist a commented line indicates the heading of each column.

Netname Syntax Rules

The AIF format enforces a strict limit on the net name syntax, not because it would be difficult to support a more complex syntax, but because AIF is intended to support the movement of data between various design tools.

Valid Characters and Punctuation
A-Z a-z 0-9 _ - + / ? %

Not allowed
! (space) # $ & ‘ ` ~ ( ) ; . < > @ { } [ ] \ ^ | , “ *

It is recommended that all netnames begin with a character - not a numeral. It is also recommended that the maximum length of a netname be 12 characters. Most systems support up to 32 characters but a few support 16 or even 12.

Upper and Lower Case Netnames
Some design systems do not differentiate between upper and lower case characters. Therefore you should not have two unique netnames that differ only by case:

e.g. Clock45 and clock45

The example above may or may not be considered the same net. It is best to make sure that no such ambiguities occur in the netlist names.

Pad Name Syntax Rules

The PADS section defines pads needed for the die and package. Pads can have any of the following shape types: Square, Rectangular, Oblong, Circular and Polygon. The pad insertion point is always defined as the center of the pad. In the case of the polygon, all polygon coordinates are relative to the center at 0, 0.

CIRCLE = **CIRCLE 100**
SQUARE = **SQ 50**
RECTANGLE = **RECT 100 200**
OBLONG = **OBLONG 100 300**
POLYGON = **POLY 1 0 6 -50, 50 50, 50 50, -20 0, -80 -50, -20 -50, 50**

Downloading AIFVU

You can download the free AIFVU from the link below. In order to run the install program you need to get a password from Artwork. To receive a password send us an email requesting the password for AIFVU and please identify your name and company.

Example Email

```
Dear Artwork,

I have downloaded AIFVU. Please send me the installation
password.

 Thanks much,

 John Boy
 International Harvesting and Package Design
 10087 Champion Way Bldg 43,  Topeka Kansas 09323
 Tel (450) 132-2213  Fax (450) 132-2113
```

aifvu_lt_107.exe	Version 1.07, April 30, 2002. Size=1.46 MB. Runs on Windows NT, 2000 or XP. (Does not work on Windows 98 or 95). Requires a password to start the installation. Freeware.

AIFVU Page Download Rev Hist Documentation Sample Files Price

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