

IPL Netlist formatter specification

Supported versions

Capture (CIS) V9.2x

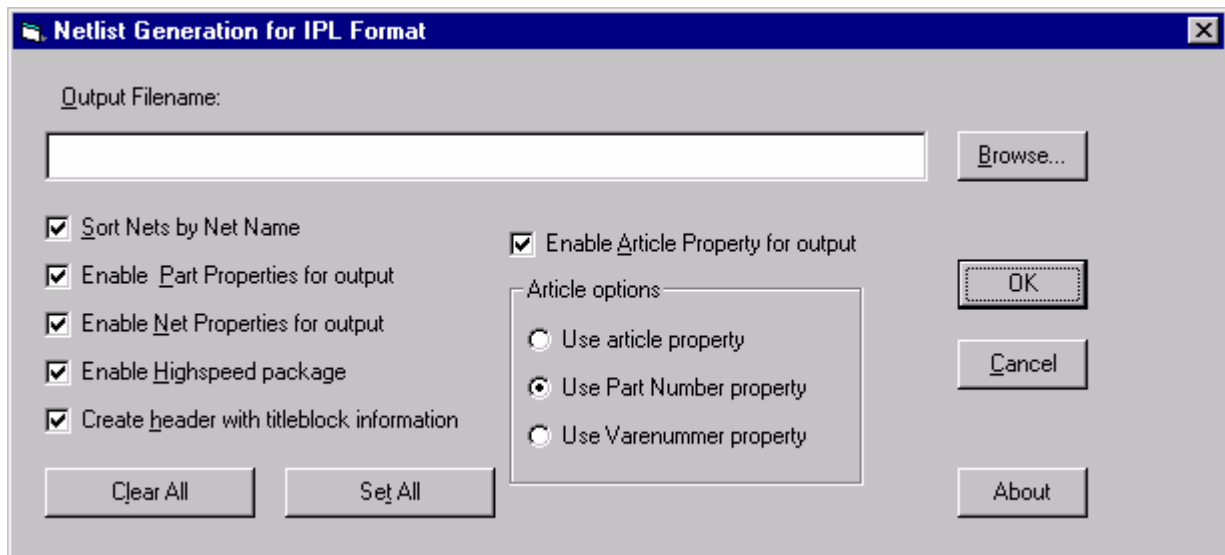
Installation instructions

1. Insert disk 1 and run *Setup.exe* from the disk. If you've downloaded the netlist formatter then unzip the files to a temporary directory and run the installation by running *setup.exe*.
2. The IPLEXE formatter must be installed to the netforms directory of Capture (CIS) e.g., c:\Cadece\PSD_14.2\tools\capture\netforms must be specified as the installation directory
3. After installation this document can be found in the netforms directory. This document is named "IPL Netlist formatter specification.pdf" and is in pdf format
4. After the installation you will also find a file called prefprop.txt in the netforms directory. This file contains a property filter called "IPL" for Capture. This filter will make all the appropriate property names for the IPL netlist available in the property editor. The prefprop.txt file **must** be copied to the capture root directory in order to work. **Remember to make a backup of the existing prefprop.txt file before overwriting it with this new file.**

How to execute the netlist formatter

1. From OrCAD Capture choose *Tools, Create Netlist* or press the netlist toolbutton
2. Select the *Other* Tab
3. Browse in the formatters and select the formatter called *IPL.EXE*
4. The netlist file name is a nonsense name that is not used at all (do not call this file the same as the project with a *onl* extension), so just press *OK*
5. Now wait until the "Netlist generation for IPL format" dialog box appears and follow the instructions in the *user interface* section.

User interface



1. It is necessary to specify a resulting netlist file. The extension could be anything except *onl*. The user can browse for an existing netlist file. The browse button will automatically look in the directory where the design file is placed.
2. All options can be disabled by pressing the *Clear All* command button.
3. All options can be enabled by pressing the *Set All* command button.
4. Pressing the *About* button gives information about the version of the netlist formatter

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The following options can be enable or disabled

Option	Description
Sort Nets by Net Name	Nets are sorted by netname
Enable Part Properties for output	All the part properties listed in the supported part properties section are enabled for use and will appear in the netlist.
Enable Net Properties for output	All the Net Properties in the supported net properties section except the ones marked HighSpeed are enabled for use and will appear in the netlist.
Enable High Speed Package	The net properties marked high speed can be used and will appear in the netlist. Selecting this option will also make "Enable Net Properties for output" active.
Create Header with titleblock information	The information in the titleblock is extracted and placed in the beginning of the netlist file as comments.
Enable Article Property	Will cause the article to be included in the netlist. Set the options to get the appropriate property to appear as the article.

General information and restrictions

1. All property names must be spelled either as lower case or with the first letter in upper case and the rest in lower case.
2. The netlister does not syntax check the property values
3. Notice that the tables only concern requirements from the netlister. It does not describe any requirements from the DDE PCB system (Supermax)

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Supported Part properties

SuperMax EDA Option	Part Property name in Capture	Requirements
Typ	PCB Footprint	
Dev	Value	

Part Property name	Alternative Part Property name	Requirements
X	x	Requires Y value
Y	y	Requires X value
Article	article	
Layer	layer	
Direction	direction	
Cannot be used with upper case M in mirror	mirror	
Height	height	
Lambda	lambda	
Room	room	
Kind	kind	
Mwatt	mwatt	
Compstatus	compstatus	
Alternate	alternate	

Added for Capture 9.1

For Capture 9.1 and newer versions it is possible to use the Block property to group parts. All parts assigned the same Block belongs to the same group. Notice that small and capital letters for the value of the Block property gives different part groups. This means parts assigned the property Block=POWER will not be assigned the same group of parts as partss assigned the property Block=power

Part Property name	Alternative Part Property name	Requirements
Block	block	

Added for Capture 9.2x

For Capture 9.2.3 and newer versions of Capture and Capture CIS a “User_geo” property has been added for custom purposes. 3 user properties for parts are also added.

Part Property name	Alternative Part Property name	Requirements
User_geo	user_geo	
User1	user1	
User2	user1	
User3	user3	

Article Property considerations

The Capture properties below can be mapped to the article in the IPL netlist.

Legal Property names for Article
Article, article
Part Number
Varenummer

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Notice that only article can be spelled with the first letter in upper case and in lower case. It is also important to notice that the Part Number contains a space between Part and Number.

If Capture CIS is used it is important that the CIS configuration is made so that the part number from the MRP system is transferred into Capture in a property with the name Article, article, Part Number or Varenummer.

How to add properties to parts

1. Adding part properties to a single part on a schematic page
 - 1.1. Double click on the part
 - 1.2. Make sure that the Part tab of the property editor is enabled
 - 1.3. Select Filter By **IPL - to do this you need to copy the prefprop.txt as described in the installation section**
 - 1.4. Now you can fill in values in the appropriate property fields
2. Adding part properties to several parts at the same time in the schematic page editor
 - 2.1. Select multiple parts by using CTRL+Left Mouse Click or by dragging an area around the parts
 - 2.2. Press right mouse button and select the **Edit Properties**. This will bring up the property editor
 - 2.3. Make sure that the Part tab of the property editor is enabled
 - 2.4. Select Filter By **IPL**
 - 2.5. Now you can fill in values in the appropriate property fields
3. Adding part properties to several parts at the same time from the project manager
 - 3.1. Select the schematic(s) that contain the parts you want to add part properties to.
 - 3.2. Select **Edit, Browse, Parts**
 - 3.3. In the window with parts that appear select the parts you want to add properties to
 - 3.4. Select **Edit, Edit properties**
 - 3.5. Press the **New** button to add a property
 - 3.6. If you add a Property Value here will all the selected parts get the same value on the property field.
 - 3.7. If you leave the Property Value field empty it is possible to go to each field and enter the correct value.

Supported Net properties

Net Property name	Alternative Net Property name	Requirements
Minlen	minlen	High Speed
Maxlen	maxlen	High Speed
Lay	Lay	
Clearance	clearance	
Impedance	impedance	High Speed
Mindelay	mindelay	High Speed
Maxdelay	maxdelay	High Speed
Plane	plane	
Powerlen	powerlen	
Poweminlen	powerminlen	
Current	current	High Speed
Tfall	tfall	High Speed
Tperiod	tperiod	High Speed
Tpulse	tpulse	High Speed
Trise	trise	High Speed
Trackwidth	trackwidth	High Speed

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Negshape	negshape	
Matchdelay	matchdelay	High Speed
Matchlen	matchlen	High Speed
Matchnetdelay	matchnetdelay	High Speed
Matchnetlen	matchnetlen	High Speed
Imptol	imptol	
Laycrossdist	laycrossdist	
Laycrossseglen	laycrossseglen	
Laycrosstotlen	laycrosstotlen	
Matchnetlentol	matchnetlentol	High Speed
Matchnetdelaytol	matchnetdelaytol	High Speed
Maxcross	maxcross	
Starpoint	starpoint	
Stublen	stublen	
Termen	termen	
Tracksha	tracksha	
Vianum	Vianum	
Viasha	Viasha	
Viastack	Viastack	

Added for Capture 9.1

Net Property name	Alternative Net Property name	Requirements
Class	Class	
Classclr	Classclr	Requires Class

Important information about using classes

1. Difference between small and capital letters for the value of the class property. This means nets assigned the property Class=LETTERS will not be assigned the same classclr as nets assigned the property Class=letters

Only one classclr must be specified for a certain class. If more are specified an error message will be reported in the session log.

How to add properties to nets

1. Adding net properties to a single net on a schematic page
 - 1.1. Double click on the net
 - 1.2. Make sure that the net tab of the property editor is enabled
 - 1.3. Select Filter By ***IPL - look in the installation section for information about the IPL filter.***
 - 1.4. Now you can fill in values in the appropriate property fields
2. Adding part properties to several nets at the same time in the schematic page editor
 - 2.1. Select multiple nets by using CTRL+Left Mouse Click or by dragging an area around the nets
 - 2.2. Press right mouse button and select the ***Edit Properties.*** This will bring up the property editor
 - 2.3. Make sure that the net tab of the property editor is enabled
 - 2.4. Select Filter By ***IPL***
 - 2.5. Now you can fill in values in the appropriate property fields
3. Adding net properties to several nets at the same time from the project manager
 - 3.1. Select the schematic(s) that contain the nets you want to add net properties to.
 - 3.2. Select ***Edit, Browse, Nets***

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- 3.3. In the window with nets that appear select the nets you want to add properties to
- 3.4. Select *Edit, Edit properties*
- 3.5. Press the *New* button to add a property
- 3.6. If you add a Property Value here will all the selected nets get the same value on the property field.
- 3.7. If you leave the Property Value field empty it is possible to go to each field and enter the correct value.